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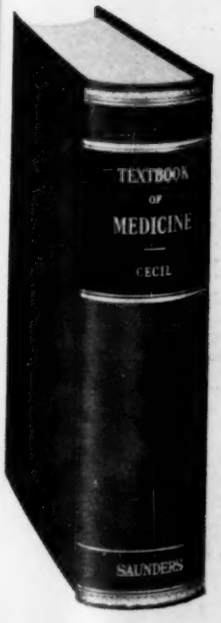

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ROENTGEN THERAPY FOR RHEUMATIC DISEASE

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The use of the roentgen ray in the treatment of rheumatic diseases is not new. Soon after the therapeutic employment of roentgen rays in the field of medicine, reports of their effect on diseases of the joints began to appear. In 1898 Sokolow [1] reported improvement of 4 patients with arthritis he had treated with roentgen radiation. Stenbeck [2] (1898) treated 52 patients, most of whom he said were "improved." For the following twenty-five years numerous reports dealing with this subject appeared scattered in the literature.

Increased interest in this form of therapy developed about 1925 when Staunig [3] reported generally good results from treatment of 400 patients with arthritis deformans, and Kohler [4] stated that considerable improvement had occurred in 100 patients with arthritis deformans and spondylitis. In the following year Kreuzwald [5] discussed his experience in treating 100 patients, of whom 87 per cent were said to be considerably improved (subjectively). Von Pannewitz [6] reported results of the treatment of more than fifteen hundred joints of patients with arthritis deformans chiefly and of treating animals in whose joints were produced lesions said by him to be characteristic of human arthritis deformans. Results were favorable in the majority of cases. Also in 1927, Kraus [7] published results of treatment of 285 patients with arthritis.

Kahlmeter [8] has had the largest experience with roentgen therapy. From 1925 to 1937 he treated about 5,000 patients with various kinds of rheumatic disease. In many cases of acute arthritis (gonococcic, gouty and septic) and different types of acute nonarticular rheumatism he stated that his results were excellent. In chronic polyarthritis (rheumatoid) he admitted difficulty in evaluating results but thought that the effect was better in patients with more acute polyarthritis, especially those with recent periarticular swelling causing pain.

Scott [9] has written numerous reports of roentgen treatment for many different diseases, including rheumatic diseases, and has emphasized the excellent results he has obtained in cases of spondylitis "adolescens" (rhizomélique), in which he gave "wide field" superficial irradiation.

Most of the study in the field of roentgen therapy has been by European investigators. The first American report appeared in 1906, by Anders, Daland and Pfahler,[10] who treated only 2 patients with chronic arthritis. Langer [11] (1933) reviewed his results in treatment of 363 patients—65 with atropic arthritis and 138 with hypertrophic arthritis. In 1935 Garland [12] reported generally good results in the treatment of different types of arthritis—chiefly acute infectious types.

Because of the excellent results claimed by practically every author reporting experiences with roentgen treatment, the paucity of study of this subject by Americans and the suggestions of roentgenologists such as that of Desjardins [13] that roentgen therapy be used more extensively for rheumatic diseases, we were stimulated to make a critical evaluation of this form of therapy in various rheumatic diseases, especially rheumatoid arthritis, about which there is the least definite information recorded.

METHOD OF STUDY

Only those patients whom we personally studied in great detail in the Rackham Arthritis Research Unit were included in this study. Except for the patients with spondylitis and some localized nonarticular rheumatism (tenosynovitis, bursitis), practically all patients selected for this study had comparable involvement in pairs of joints. In these persons, one of the pair of joints involved would be treated with roentgen radiation and one would be left untreated to serve as a control in order better to evaluate the therapeutic effects. Usually the only other treatment instituted was of a general nature: rest, salicylates, antianemic therapy and heat and exercises to all joints alike between roentgen treatments. In a few instances other forms of physical therapy were applied to the joints not treated with roentgen rays, in order to contrast results.

Read at the seventh annual meeting of the American Rheumatism Association, New York, June 10, 1940.

From the Rackham Arthritis Research Unit and the Department of Roentgenology, Division of Radiation Therapy, University of Michigan Medical School. The Rackham Arthritis Research Unit is supported by the Horace H. Rackham School of Graduate Studies of the University of Michigan.

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On all patients the same technic of roentgen therapy was employed. Physical factors: 200 kilovolts (175 kilovolts constant potential equivalent); 0.5 mm. of copper and 1 mm. of aluminum filtration; 50 cm. skin-target distance; minute output of 50 roentgens (measured in air); usual size of field approximately 15 by 15 cm. Dose: each field was treated three times, receiving 200 roentgens at each sitting; the treatments were given every other day; the total dose was thus 600 roentgens. Such therapy hereafter will be referred to as "a series of treatments." Most patients were given three series of treatments to the same parts, each series being separated by four to six weeks. The number of joints treated in any series varied from one to six. In some cases new parts were treated after three or more series had been given to the original locations.

TABLE 1.—*Patients with Rheumatic Diseases Treated by Roentgen Radiation*

	Number of Cases
Rheumatoid arthritis	74
Spondylitis rhizomélique	15
Nonarticular rheumatism	7
Hypertrophic arthritis	4
Total	100

In order to study the psychic effect that might be associated with roentgen therapy, some patients were treated exactly as described but with a lead screen placed to protect the part from irradiation. Sometimes treatment screened by lead was employed between series of true roentgen treatment to the same joints; sometimes the first one or two series of treatments given were blocked with lead screens, and subsequently the parts were treated with roentgen therapy. In still other patients, some joints would be treated in the usual manner, and simultaneously comparable joints would be treated but screened with lead. Care was taken that the patient did not know that such screened joints were not actually irradiated.

TABLE 2.—*Clinical Results of Roentgen Therapy in 57 Cases of Rheumatoid Arthritis*

Clinical Evidence of Benefit: Subjective	Clinical Evidence of Benefit: Objective	Number of Cases	Percentage	
None	None	25	44	
Slight, temporary *	None	7 (3-P)†	12	
Slight	None	1	2	
+ temporary	None	4	7	15
+	None	2	3	
++ temporary	None	1 (1-P)	2	
++	None	2	3	
Total		42	74	
Slight, temporary	Slight, temporary	1	2	
Slight	Slight	1 (P)	2	
+ temporary	Slight, temporary	2	3	
+	Slight	3	5	
Slight	+	1	2	14
+	+	2 (1-P)	3	
++	++	4	7	
+++	+++	1	2	
Total		15	26	

* Temporary, less than one month.
† P, in only some of the joints treated.

Most of the patients studied had a chronic rheumatic condition, and all of these had been under observation long enough to know that they were in a "steady state," the disease not changing in any essential degree when roentgen therapy was employed. As has been emphasized by Abrams and Bauer,[14] this is important if one is to evaluate accurately the effects of any type of therapy.

During the course of treatment and throughout the subsequent period of observation, all patients were interviewed frequently. Questions that were in no way leading were asked in order to learn the subjective response; careful examinations were made frequently by the same physician to detect physical changes, especially in regard to the joints; photographs were taken at intervals; frequent erythrocyte sedimentation rate determinations were made by the Rourke-Ernstene[15] technic; in many cases roentgenograms of joints were compared before and after treatment; in some cases a study was made of the cell content of synovial fluid aspirated simultaneously from treated and comparable untreated joints before and several times during the course of therapy; in a few cases histologic examination was made of synovium and joint capsule obtained after treatment.

TABLE 3.—*Psychic Effect of Roentgen Therapy in Rheumatoid Arthritis*

Patient	Subjective Benefit: Without Lead	Subjective Benefit: With Lead Screen	Objective Benefit: Without Lead	Objective Benefit: With Lead Screen
Patients with Same Joints Treated Screened and Unscreened				
B. B.	++	++	++	++
B. S.*	+	Slight	0	0
A. P.*	++	0	+	0
L. V.	0	0	0	0
B. W.*	+	0	+	0
E. D.	+	+	0	0
Comparable Joints Treated Simultaneously				
F. M.	++	++	++	++
H. R.	++	++	Slight	Slight
S. K.	++	++	++	++
M. O.	0	+	Slight	Slight
M. K.	+	++	+	++
C. F.	++	++	0	0
M. C.	Slight	+	0	0
C. H.	+	++	+	+
M. S.	0	Slight	0	0

* Roentgen therapy better than lead-screened (psychic) therapy.

In evaluating the effect of roentgen therapy, changes in treated and similarly diseased untreated joints were compared. Clinical results were considered from the subjective and the objective standpoint and were graded none, slight, one, two, three and four plus, to indicate an increasing amount of improvement.

RESULTS

One hundred patients with different types of rheumatic diseases were studied (table 1). In all two hundred and ninety-three joints[16] were irradiated; in so doing seven hundred and ninety-eight separate applications of roentgen rays were given. Most of the patients were observed for at least six months after therapy was begun. Ten patients were studied less than three months and 14 for from three to six months. The majority of patients in these two groups were being studied with lead screen control for psychic effect. Forty-nine patients were carefully studied for from six to twelve months, and 23 for from twelve to eighteen months; 4 were followed more than eighteen months.

14. Abrams, N. R., and Bauer, Walter: The Treatment of Rheumatoid Arthritis with Large Doses of Vitamin D, J. A. M. A. **111**: 1632-1639 (Oct. 29) 1938.

15. Rourke, M. D., and Ernstene, A. C.: A Method for Correcting the Erythrocyte Sedimentation Rate for Variations in the Cell Volume Percentage of Blood, J. Clin. Investigation **8**: 545-559 (June) 1930.

16. The hand and foot and the cervical, dorsal, lumbar and sacral portions of the spine are considered in this study as a single joint.

Clinical Results in Rheumatoid Arthritis.—The clinical results of roentgen therapy in 57 patients with characteristic rheumatoid arthritis, in various stages of the disease, always with active synovitis, are summarized in detail in table 2. It should be noted that 44 per cent of these patients had no benefit from roentgen treatment, and in 74 per cent there was no objective evidence of improvement. Of the 26 per cent in whom objective evidence of benefit occurred it was of significant grade in only 14 per cent. In 21 per cent of the group the subjective improvement, which was the only benefit noted, lasted for less than one month, and temporary improvement (lasting less than one month) of subjective and objective nature occurred in 5 per cent of patients. In some persons benefit was noted in only some of the joints irradiated.

The clinical results were carefully examined in respect to various differences in the patients and the disease. No correlation was found between clinical results and (1) the age of the patient, (2) the duration of symptoms of arthritis or (3) the activity of the disease as determined by local signs, leukocytosis, fever and sedimentation rate of erythrocytes. In regard to the extent of the arthritic involvement (number of joints affected) there was no correlation—except that in 3 cases in which only one or two joints were involved when roentgen therapy was given results were better than in the group at large. These were the patients with early or acute rheumatoid arthritis with unsatisfactory control joints (untreated) in whom remission of severe synovitis often tends to occur naturally, so that evaluation of roentgen effect is difficult.

TABLE 4.—*Frequency of Exacerbations of Inflammation in Treated Joints Following Roentgen Therapy*

Number of Cases	Months After Last Treatment
1	During treatment
3	1
1	2
3	3
1	5
Total 9 (16 per cent)	

We were impressed with the frequency of a report by the patient such as "As soon as I heard the machine working, I began to feel better." This statement was most often made by those with subjective benefit only. This suggested to us that some or all of the subjective benefit might be of psychogenic origin, and this factor was objectively studied by preventing roentgen rays from reaching the part to be treated by the use of lead screens as described. The purely psychic benefit resulting from such treatment as studied in 15 additional cases of rheumatoid arthritis is summarized in table 3. In all but 3 of the 15 cases as much benefit occurred when parts were screened as when irradiated. Thus it is clearly demonstrated that much but not necessarily all of the subjective benefit may be of psychogenic origin.

In patients with rheumatoid arthritis definite exacerbation of synovitis occurred just as frequently in joints treated with roentgen rays as in the untreated joints. As shown in table 4, such exacerbations were noted soon after treatment in 16 per cent of the cases. We interpret this to indicate that roentgen therapy as given did not protect the joints from suffering increased inflammation for even a short time.

Clinical Results in Spondylitis Rhizomélique.—The clinical results in 15 cases of spondylitis rhizomélique appear in table 5. Here the effect appears to be decidedly different from that in patients with rheumatoid arthritis of peripheral joints. Definite subjective and objective evidence of benefit was noted in 74 per cent of the cases and was certainly of significant degree, and not just temporary, in 67 per cent. Naturally, in those patients with extensive calcification of ligaments, great improvement of motion of the affected parts could not be expected, but we were surprised and pleased to observe increase of significant degree in motion of the back, often when pain decreased.

TABLE 5.—*Clinical Results in 15 Patients with Spondylitis Rhizomélique Treated with Roentgen Therapy*

Clinical Evidence of Benefit		Number of Cases	Percentage
Subjective	Objective		
None	None	2	13
++	None	2	13
Total		4	26
Slight	+	1	7
+	+	3	20
++	+	2	13
+++ *	+	1	7
++	++	3	20
+++ (complete)*	+++ (complete)	1	7
Total		11	74

* Clinically characteristic cases (not proved) of short duration.

Clinical Results in Nonarticular Rheumatism and in Degenerative Disease of Joints (Hypertrophic Arthritis).—Eight patients with various types of nonarticular rheumatism were treated. The results are summarized in table 6. Two patients had periarthritis of the shoulders; the duration, extent and severity of involvement were comparable in the two, as far as could be determined. One patient reported no benefit; the other reported moderate clinical improvement—but improvement occurred equally in the treated and screened shoulder, indicating only psychic effect. In 1 patient with calcified subdeltoid bursitis with symptoms for only four months there was moderate symptomatic improvement and increased ease and range of motion. Roentgenograms three months after therapy showed a decrease in the size of calcification in the bursa. In 1 patient with fibrositis involving each hand comparably there was only psychogenic symptomatic benefit—as shown by lead screen control in treating one hand. Each of 3 patients with achillobursitis showed different results. There was no benefit in 1 patient repeatedly treated for tenosynovitis. (Treatment was first given five weeks after the symptoms began.)

TABLE 6.—*Clinical Results Following Roentgen Therapy in Eight Cases of Nonarticular Rheumatism*

Patient	Diagnosis	Subjective Benefit		Objective Benefit	
		Without Lead	With Lead Screen	Without Lead	With Lead Screen
H. P.	Periarthritis of shoulder...	0	..	0	..
J. K.	Acute fibrositis of shoulders and hands.....	++	++	++	++
M. M.	Calcified subdeltoid bursitis	++	..	++	..
D. B.	Fibrositis of hands.....	+	+	0	0
L. R.	Achillobursitis.....	++	..	++	..
G. O.	Achillobursitis *.....	+++	++	0	0
B. B.†	Achillobursitis.....	0	..	0	..
E. R.	Tenosynovitis and fasciitis	0	..	0	..

* Roentgen therapy better than lead-screened (psychic) therapy.
† Treated for rheumatoid arthritis also, without benefit.

It is in this group of patients that one might expect the best and the most consistent benefit, but in our small group of patients the results were discouraging. In 2 of the 3 patients controlled by lead screens, benefits were shown to be psychogenic. The nature of the disease often does not allow comparable untreated control parts, so that the results are less dependable when critically examined.

TABLE 7.—*Clinical Results in 4 Patients with Degenerative Disease of Joints (Hypertrophic Arthritis) Treated with Roentgen Radiation*

Clinical Evidence of Benefit		Number of Cases
Subjective	Objective	
None	None	2
Slight, temporary	None	1
+	None	1

Only 4 patients with degenerative joint disease were studied. Two had roentgen therapy to the fingers and 2 to a hip joint; in all cases opposite comparably involved joints were left untreated. The results (table 7) were poor.

Changes in the Rate of Sedimentation of Erythrocytes.—In patients with active rheumatoid arthritis and spondylitis rhizomélique, the erythrocyte sedimentation rate is usually elevated, and reductions in rate are considered by most students of arthritis to indicate improvement in the disease process. We were able to follow the changes in erythrocyte sedimentation rate in most patients treated. The results are shown in table 8. Definite decreases in rate occurred in only 15 per cent of patients with rheumatoid arthritis. In these cases the degree of fall, graded slight, moderate or severe, is correlated with the clinical results, both subjective and objective. It should be noted that in general there is no correlation, except that 2 patients with only slight decreases in sedimentation rate had no clinical improvement, and the 1 patient with great decrease in sedimentation rate showed 3 plus clinical improvement. This patient had acute rheumatoid arthritis.

TABLE 8.—*Changes in Erythrocyte Sedimentation Rate Following Roentgen Therapy*

			Number of Cases	Percentage
Rheumatoid arthritis (67 cases)				
Increased			5	7
No change			52	78
Decreased			10	15
	Subjective	Objective		
Slight			5	
2	0	0		
1	Slight	Slight		
1	++	0		
1	++	++		
Moderate			4	
1	Slight	0		
1	+	+		
1	++	0		
1	++	++		
Great			1	
	+++	++		
Spondylitis rhizomélique (15 cases)				
Increased			0	
No change			9	60
Decreased			6	40
	Subjective	Objective		
Slight			0	
Moderate			5	
1	+	0		
1	+	+		
2	++	+		
1	++	++		
Great			1	
	+++	+++		

Notice that there was a decrease in erythrocyte sedimentation rate in 40 per cent of patients with spondylitis rhizomélique. Again there is no close correlation between the changes in sedimentation time and clinical results. The patient with a great reduction in sedimentation rate and 3 plus clinical improvement had clinically characteristic early spondylitis without abnormal calcification.

Changes in Roentgenographic Appearance of Treated Joints.—Sufficient roentgenograms of joints to allow a study of any changes during and following roentgen therapy were made of 30 patients with rheumatoid arthritis and 5 with spondylitis rhizomélique (table 9). It is clearly shown that no anatomic improvement was demonstrated by roentgen rays in any case. Frequently, increased destruction or atrophy, characteristic of progression of the disease, would be noted in the treated joints as well as in the untreated. There was no correlation between changes in the roentgenograms and clinical results; not infrequently in patients who reported symptomatic improvement following roentgen therapy subsequent roentgenograms of the treated joints showed more extensive anatomic abnormalities.

Cytology of Synovial Fluid.—In 12 patients with rheumatoid arthritis synovial fluid was aspirated simultaneously from two comparable joints, usually the knees. Subsequently, one joint would be treated with roentgen radiation, the other left untreated. At intervals during and after therapy each joint was again aspirated. The cell content of the synovial fluid was studied. The results are compiled in table 10. There was a decrease in the number of cells in the fluid from treated joints only or predominantly in only 3 patients (C. J., C. M. and M. M.). In all others there was either no change or comparable changes in the fluid of the treated and of the untreated joints. There was no correlation between the cell content of synovial fluid and clinical effects of roentgen therapy.

TABLE 9.—*Changes in Roentgen Ray Appearance of Joints Following Treatment with Roentgen Radiation*

	Number of Cases
Rheumatoid arthritis (30 cases)	
No change	17
Increased osteoporosis	5
Increased articular destruction	9*
Spondylitis rhizomélique (5 cases)	
With ligamentous calcification	
No change	3
Increased calcification	1
Without ligamentous calcification	
No change	1

* One of these patients had increased osteoporosis also.

Histologic Changes.—In 5 cases of rheumatoid arthritis we were able to examine capsular tissue removed for biopsy or during synovectomy. In no case was any change recognized as an effect of roentgen therapy.

Ill Effects.—There were no recognizable ill effects of any kind in 68 of the 100 patients treated. In some who had three or more series of treatments to the same parts there was moderate local pigmentation and depilation, commonly seen after irradiation. Sometimes thickening of the skin was noticeable. In 12 per cent of the patients with rheumatoid arthritis a temporary increase in pain in the joints was complained of. This was unaccompanied by objective changes and did not indicate the subsequent course; some patients had no benefit; others had different degrees of improvement.

In only 2 patients with rheumatoid arthritis did nausea or anorexia occur, and, to show the powerful psychic effect, one of these persons had all radiation screened by lead!

Gastrointestinal symptoms were common in patients with spondylitis whose backs were treated; anorexia, nausea, vomiting or diarrhea occurred as a rule when the dorsal or lumbar part of the spine was treated, alone or along with the remainder of the spine. These symptoms always completely subsided in two or three days after therapy.[16a]

TABLE 10.—*Cell Content of Synovial Fluid*

Patient and Dates of Roentgen Therapy	Dates of Synovial Fluid Examination	Treated Joint: Total White Blood Cells per Cu. Mm.	Treated Joint: Polymorphonuclear Cells, Percentage	Comparable Untreated Joint: Total White Blood Cells per Cu. Mm.	Comparable Untreated Joint: Polymorphonuclear Cells, Percentage	Clinical Results
V. P.						
Oct. 12-17	Oct. 18	.....	..	9,150	42	
Nov. 14-18	Nov. 21	.....	..	3,750	1	
Jan. 4-9	Jan. 5	.....	..	3,825	7	
Feb. 7-13	Feb. 10	2,950	58	6,050	57	0
Mar. 13-20	Mar. 17	7,000	82	7,250	57	
April 24-30	April 27	2,200	4	5,600	10	
A. B.	Jan. 28	.....	..	19,725	78	
Jan. 31-Feb. 6	Mar. 1	32,000	79	9,400	78	
Mar. 6-10	.....	.....	..	.....	..	+
April 17-21	April 18	8,500	75	20,450	85	
W. W.	Nov. 14	.....	..	35,350	81	
Nov. 16-21	.....	.....	..	.....	..	
Dec. 16-21	Dec. 17	20,450	93	21,650	85	+
Jan. 30-Feb. 3	Jan. 31	12,250	81	14,900	81	
G. S.	Aug. 14	16,175	92	21,600	86	
Aug. 24-29	Sept. 1	13,950	67	9,000	63	0
	Sept. 26	14,400	79	19,550	86	
Sept. 27-Oct. 2	.....	.....	..	.....	..	
L. C.	Sept. 23	19,750	86	.....	..	
Jan. 16-20	Jan. 24	4,050	66	19,400	72	Slight
Feb. 15-20	Feb. 21	4,750	18	6,650	80	benefit
April 24-28	.....	3,100	..	.....	..	
H. R.	Sept. 29	7,850	67	12,250	86	
Oct. 2-6	Oct. 4	6,750	78	5,000	86	
Nov. 6-10	Dec. 11	7,400	80	7,000	83	+
Dec. 13-18	Jan. 22	7,750	..	5,150	..	
S. K.	Feb. 15	19,350	65	8,350	44	
Feb. 17-27	Mar. 16	27,450	75	23,600	75	
Mar. 19-27	April 13	29,300	82	30,350	74	
April 17-24	.....	.....	..	.....	..	++
	Sept. 8	13,400	72	8,100	58	
	Oct. 13	18,750	..	10,300	..	
C. J.	Mar. 13	25,300	83	16,800	92	
Mar. 17-22	Mar. 28	16,350	83	12,150	83	
	April 17	13,300	77	35,850	87	
April 20-26	.....	.....	..	.....	..	0
May 26-31	June 20	6,450	86	11,150	87	
	July 10	7,300	..	10,300	..	
C. M.	Aug. 19	54,650	75	28,730	84	
Aug. 22-26	.....	.....	..	.....	..	
Oct. 3-5	Oct. 14	.....	..	26,750	78	
Nov. 30-Dec. 5	Dec. 5	19,150	88	30,100	81	
Jan. 17-22	Jan. 23	25,975	82	30,000	83	+
Mar. 13-20	Mar. 24	19,600	89	13,400	89	
April 26-30	April 29	28,700	85	29,850	86	
	July 13	22,250	..	29,400	..	
M. M.	Feb. 17	8,850	3	8,050	7	
Feb. 17-23	.....	.....	..	.....	..	+
Mar. 13-17	Mar. 16	4,150	12	7,250	16	
E. G.	Oct. 31	.....	..	35,000	93	
Nov. 10-16	Nov. 23	6,900	57	.....	..	
	Dec. 14	2,925	3	8,425	41	
Dec. 19-Nov. 24	Jan. 19	2,175	1	6,275	3	
Jan. 17-23	Mar. 8	2,400	7	7,700	3	+
July 12-17	Sept. 12	3,200	6	3,150	4	
Sept. 12-18	.....	.....	..	.....	..	
H. M.						
Jan. 16-20	Jan. 18	10,050	75	7,450	75	
	Feb. 14	9,275	89	5,650	78	Slight
Feb. 17-21	Mar. 18	3,475	45	5,000	3	benefit
Mar. 20-27	.....	.....	..	.....	..	

16a. In 2 among about 30 cases of spondylitis rhizomélique treated with roentgen rays since this report was prepared we have observed significant leukopenia shortly after treatment, which in each case was given to the entire spine. The decrease in white blood cell count was chiefly in the lymphocyte series. There was complete recovery from the leukopenia in two weeks in 1 case and after four weeks in the other.

COMMENT

Why roentgen therapy should be beneficial in rheumatic diseases, and, if it is, how its effects are produced, are questions that deserve consideration. In discussing radiotherapy for inflammatory conditions, Desjardins [13] emphasized the destructive effect of irradiation on leukocytes, especially in suppurative inflammations, and the possible mechanism of benefit therefrom. But relatively few forms of rheumatic disease are suppurative, and certainly the more common forms of chronic arthritis are nonsuppurative! It is difficult to see how any explanation based on leukocyte destruction can be logical in rheumatoid arthritis or in spondylitis rhizomélique. Our study of synovial fluid did not reflect any consistent destructive effect on the leukocytes therein. None of our studies revealed any information to elucidate the mechanism of roentgen effect. Ochsner [17] enumerated several other theories to explain benefit that could result from roentgen therapy in inflammatory diseases; some depend on histologic changes; others involve chemical, metabolic or immunologic effects. All lack convincing proof. After careful search we are unable to find a satisfactory explanation of the modus operandi of roentgen therapy in this group of diseases or any theoretical background which would suggest its use.

The technic of irradiation employed by various investigators has differed considerably; the voltage, filtration, skin-target distance, size of the field, number of ports, number of roentgens delivered at each sitting, frequency and number of applications and total dose all have varied. Some authors have stated that results depend a great deal on small changes in physical factors of irradiation.[9] This seems unreasonable to most students of this problem. After careful investigation of different methods that had been used, we adopted the method described because it seemed most suitable and because it was essentially the technic used by Kahlmeter,[8] whose experience has been the largest and whose results have been among the best reported. There is as much theoretical support, and more clinical support, for the value of this method of treatment as for any others described. It must be clearly borne in mind, however, that only one technic has been employed in our investigations, and all of our conclusions are based on this technical method.

Further, the technic employed is a type of local, high voltage roentgen therapy. From all evidence at hand its effect is restricted to the part irradiated or a small surrounding area. On this basis we feel justified in contrasting changes in treated and comparably diseased, untreated joints in evaluating the effect of irradiation.

Subjective benefit was much more frequently reported than objective evidence of improvement could be demonstrated. The symptomatic improvement most frequently reported was partial or complete relief of pain; decrease in stiffness and greater ease and range of motion were less often noticed. Objectively, decrease in swelling and tenderness and increase in range of motion were observed in the order named.

Because of the often encountered natural remissions in chronic rheumatic disease, especially in rheumatoid arthritis, the necessity for careful control of all studies aimed to evaluate any therapeutic procedure cannot be

17. Ochsner, H. C., and Mumford, E. B.: Roentgen Therapy for Painful Conditions of the Bones and Joints, Radiology **34**: 444-448 (April) 1940.

overemphasized. Rigid control in the evaluation of our results largely accounts for the much less glowing results of our investigation when compared with reports of others. Frequently improvement was reported by the patient or observed by the examiner in treated joints which could and probably would have been attributed to the effect of irradiation had not similar or greater improvement simultaneously occurred in comparable untreated joints. Further, no one doubts that the psychic effect of roentgen therapy can be great. The results of the study employing lead screens leave little doubt that many of the patients with rheumatoid arthritis listed in table 2 as showing only subjective benefit had symptomatic improvement on a psychogenic basis. Thus proper attention to "control" in this critical evaluation reduces what might have been considered as about 80 per cent beneficial results of treatment in cases of rheumatoid arthritis to less than 30 per cent.

In this regard it should be pointed out that the effect of treatment in cases of spondylitis cannot be controlled well by untreated parts because of the location of the disease. Further, our results have not yet been sufficiently controlled by lead-screened treatments. When so controlled, the benefit apparently due to roentgen irradiation may be found to diminish. However, the high percentage of patients who showed definite objective evidence of improvement suggests that the majority of benefit noted is truly a roentgen effect. This is being studied further.

The diagnosis of spondylitis rhizomélique is never questioned when roentgenograms of the spine show calcification of paravertebral ligaments, but after calcification no treatment could be expected to mobilize the spine. Satisfactory treatment of this disease depends to a large extent on early diagnosis and the institution of effective therapy before the occurrence of abnormal calcification. Diagnosis at this early stage, however, may be shrouded in doubt. Two patients in whom we made the diagnosis of early spondylitis rhizomélique had the most dramatic benefit from roentgen therapy; in 1 there was almost complete disappearance of all clinical evidence of disease. In each instance symptoms had been present only six to nine months; the clinical manifestations were typical; roentgenograms showed disease of the sacroiliac joint, and there was elevation of the erythrocyte sedimentation rate. We believe that these patients had spondylitis rhizomélique, but we recognize the possibility of doubt. We shall watch the course of events in these and similar patients with great interest.

Scott [9] has reported excellent results from treating more than 400 patients with spondylitis rhizomélique with an entirely different technic of irradiation, which he calls "wide field" therapy. He administered relatively small amounts of irradiation superficially to large areas of the trunk (back and front). He did not treat the affected parts (by local high voltage therapy), and he emphasized the necessity for irradiating large areas of the body, believing that in some way the body thereby becomes better able to resist and cure this disease (and many others). To us his arguments and rationale are not convincing. We have, however, critically examined a patient with spondylitis rhizomélique several times before and after he received treatment by Scott, and we are convinced of the clinical and laboratory evidence of improvement which followed the therapy. Although nothing can be stated, on the basis of this one case we are planning to study the effects of this method of therapy further. Some patients treated by us, with the high voltage roentgen technic, have improved in just as satisfactory a manner.

The sedimentation rate of erythrocytes failed to indicate any constitutional improvement in most patients with rheumatoid arthritis. Of course, we treated only half, or less, of the affected joints of most patients, which may be a factor in this regard. We were especially disappointed that in so many patients who had exacerbations of synovitis recently irradiated joints shared equally in the increased inflammation. In some cases increase in the severity of the disease occurred only in treated joints. (These exacerbations are not to be confused with the temporary symptomatic flare-ups which sometimes occurred during treatment. They were the changes commonly seen with relapses in rheumatoid arthritis.) Irradiation seems to offer no protection against such exacerbations.

Many of the older reports and Kahlmeter's [8] more recent studies indicate that roentgen therapy gives good results consistently in the acute inflammatory types of arthritis, such as gonococcic and gouty arthritis, and in the more acute forms of nonarticular rheumatism. Certainly this form of therapy would not be preferable to the highly satisfactory chemotherapeutic agents now available for the treatment of gonococcic and gouty arthritis. Many acute forms of nonarticular rheumatism are of such short duration that the time needed for safe, repeated irradiation limits its usefulness in these cases. In the more obstinate cases our results were discouraging. Much of the subjective benefit obtained in these cases was shown to be psychogenic. However, our experience with nonarticular rheumatic disease is insufficient to permit a final opinion.

In the few cases of degenerative joint disease studied, results were poor, but more patients will need to be observed before satisfactory evaluation can be made. If symptoms of this disease are largely due to associated fibrositis, as Abel, Siebert and Earp [18] stated, benefit could more likely be expected than if it depended on alteration of the joint structure proper. Because roentgenograms showed no benefit to the bones and cartilage of the joints any effect of roentgen irradiation seems definitely limited to soft tissue.

The general limitations of this form of treatment need to be kept in mind. Only a few parts can be treated at a time, and if extensive polyarticular involvement exists, as it does so commonly in rheumatoid arthritis, adequate treatment of all parts might be impossible or could be accomplished only with great inconvenience. The availability of roentgen therapy is greatly restricted, and the expense would often prohibit its use. The only real danger known is the damaging effect of irradiation on the skin.[19] We have seen 1 patient who had extensive treatment to the hands (given elsewhere) in whom there subsequently developed what appeared to be early irradiation dermatitis.

The most important theoretical and practical criticism of roentgen treatment of rheumatoid arthritis is that it is local treatment for a constitutional disease. It would seem highly fantastic to expect favorably to influence the disease in general by local irradiation. However, often patients with many joints affected are kept

18. Abel, Oliver; Siebert, W. J., and Earp, Ralph: Fibrositis, J. Missouri State M. A. **36:** 435-437 (Nov.) 1939.

19. Leukopenia observed in cases of spondylitis rhizomélique in which treatment over a large portion of the spine was administered has already been mentioned in a previous footnote.

uncomfortable or are incapacitated by persistent severe inflammation in only one or two joints. It was in this group of patients that we hoped for good results from roentgen treatment, but especially in this group results were undependable and in general discouraging.

SUMMARY

One hundred patients with rheumatic disease who were given local high voltage roentgen irradiation were carefully studied under well controlled conditions for the effect of this form of treatment. In a large group of patients with rheumatoid arthritis, 44 per cent showed no subjective or objective benefit that could be attributed to irradiation; in 30 per cent only subjective benefit occurred; in only 26 per cent was there any objective improvement which could be attributed to roentgen therapy, and this was of significant grade in only 14 per cent. Decrease in pain was the chief symptomatic improvement, and this was clearly shown to be of psychogenic origin in many of the patients. The joints irradiated were not protected against subsequent exacerbation of synovitis. No correlation was found between clinical results and age of the patient or duration or activity of the disease; results were slightly better in patients with early rheumatoid arthritis.

In 85 per cent of the patients the erythrocyte sedimentation rate remained unchanged or it was increased. There was no close correlation between changes in sedimentation rate and clinical results. There was no improvement in the roentgenographic appearance of the joint cartilage or bones in any instance; more extensive anatomic changes appeared in some patients clinically improved. No consistent change was observed in the synovial fluid or the capsules of the joints treated. Thus in patients with rheumatoid arthritis roentgen irradiation by the technic employed gave unpredictable and unreliable results, which by careful study were shown to be far less satisfactory than other reports have suggested, and in general they were so discouraging that we have abandoned this treatment except in rare, obstinate cases or cases in which a psychic effect is desired.

Significant subjective and objective results were obtained in 74 per cent of 15 patients with spondylitis rhizomélique. Some patients had complete disappearance of symptoms, and in 2 patients with early spondylitis there was almost complete disappearance of all clinical evidence of disease. The sedimentation rate of erythrocytes decreased significantly in 40 per cent. Roentgenographic abnormalities were not favorably altered. The nature of the disease does not allow a satisfactory control of the investigation, and psychic effects have not yet been sufficiently studied, but in general we are quite encouraged with the possibilities of roentgen irradiation in this type of arthritis, and we are studying it further.

Our experience with degenerative disease of joints and nonarticular forms of rheumatism is insufficient to allow critical appraisal of the value of roentgen therapy. The results in general have been discouraging. Part at least of the symptomatic benefit has been psychogenic.

The rationale for employment of roentgen therapy in rheumatic disease and its modus operandi remain to us a complete mystery.

MITRAL STENOSIS AFTER EIGHTY

WITH ESPECIAL REFERENCE TO DR. HERMAN F. VICKERY

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It is common knowledge that rheumatic heart disease is sometimes found after middle age and that it does not necessarily limit life to three score and ten, but survival beyond 80 years is so unfamiliar as to demand a special note. We are herein reporting, first, the striking case of Dr. Herman F. Vickery, who not only reached his eighty-fourth year with a moderate degree of mitral stenosis but also lived his long life actively and without cardiac symptoms except for angina pectoris at the end of his life, and, second, 3 other cases of proved mitral stenosis in Boston with survival beyond the age of 80.

Coombs [1] in 1924 reported that the oldest of a series of 281 patients with established rheumatic heart disease was 70. In Grant's [2] series of 1,000 men suffering from heart disease the oldest patient with mitral stenosis was 59. In 1926 Cabot [3] reported that 6 patients between 70 and 80, but none over 80, had disease of the mitral valve among 208 persons shown to have had rheumatic heart disease in a series of four thousand autopsies at the Massachusetts General Hospital between 1896 and 1919 and that 1 patient in the eighth decade in his outpatient and private practice had had it. Edström [4] in 1935 reported that no patient in a large series in Sweden was over 80. DeGraff and Lingg [5] found that 5 among 644 patients with rheumatic heart disease from the cardiac clinic of the Bellevue Hospital in New York known to be dead were between 70 and 80 years old; none was over 80. Conversely, none of 83 patients between the ages of 80 and 90 in a series of 5,215 on whom an autopsy was performed at the Boston City Hospital showed rheumatic heart disease.[6]

Recently, however, mitral stenosis has been found at autopsy on a woman who died at 80 and had been known to have had auricular fibrillation for twenty-five years before her death.[7] Dr. Robert Starr [8] of Hartford, Conn., has also recently told us of a patient with mitral stenosis whom he first saw in 1928 at the age of 73 and who continues in fair health, now 85 years old and as active as any person of that age.

PRESENT SERIES OF PATIENTS

CASE 1.—Herman F. Vickery, noted physician, was born in Rochester, N. Y., in 1856. He was always slight in build but active and well until old age, except for a period of a year of delicate health of uncertain nature in boyhood at which time he was out of school. He smoked considerably until he was 79 but used little alcohol. He exercised vigorously, rowing for many years, riding a bicycle in his early days of practice and

1. Coombs, Cary: Rheumatic Heart Disease, New York, William Wood & Company, 1924.
2. Grant, R. T.: After Histories for Ten Years of One Thousand Men Suffering from Heart Disease, Heart **16:** 276 (June) 1933.
3. Cabot, R. C.: Facts on the Heart, Philadelphia, W. B. Saunders Company, 1926.
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gardening even in his old age. He was never stopped by symptoms until the age of 77, when he gave up playing more than nine holes of golf at a time because of dyspnea on the grades and easy fatigue. Two years later angina pectoris came on and limited him sharply, so that he could hardly walk around a block in winter weather. He had rarely been examined but had been granted life insurance in his youth.

His father died of apoplexy at 63 and two sisters of cancer at 45 and 55 respectively. His mother lived to be 81. One son died of rheumatic heart disease at 15 years. Three children were well.

We were asked to see Dr. Vickery because of his recent and increasing angina pectoris in February 1936, when he was 79½ years old, four years before his death. At that time he looked well but was slightly deaf. His deafness increased during the rest of his life, especially after an attack of otitis media in 1937. There was a moderate arcus senilis in each eye. The jugular pulse was normal. The heart was slightly enlarged, with accentuated first and third sounds at the apex and second sound in the area of the pulmonary valve, and there was a slight mid-diastolic murmur at the apex. The rhythm was regular except for rare premature contractions, the pulse rate was 70 and the blood pressure was 190 systolic and 100 diastolic. There was no evidence of congestive failure. Aminophylline and glyceryl trinitrate were prescribed along with much limitation of activity, light meals and abstinence from tobacco.

In May 1936 he reported himself much improved, able to walk around Jamaica Pond (about two miles) and to play nine holes of golf. He had used only a few tablets of glyceryl trinitrate in the previous few months but with benefit each time. His blood pressure was 175 systolic and 85 diastolic. No murmurs were heard. The electrocardiogram showed normal rhythm at a rate of 75 with high T waves in lead 1, slightly inverted T waves in lead 2 and deep T waves in leads 3 and 4. Fluoroscopic examination revealed that he had a slight enlargement of the heart, clear lungs and a dense but not widened aorta.

In October 1936 he was well, having golfed and gardened during the summer with only rare attacks of angina pectoris. No cardiac murmurs were noted. His electrocardiogram had returned essentially to normal, with upright T waves in leads 2 and 4.

On Feb. 8, 1937 he came to the office unusually well for that time of year and with an essentially normal electrocardiogram, but three days later he caught a cold, and for several weeks he was ill with bronchopneumonia and otitis media. During this time there was a period of auricular fibrillation which lasted a week, but no murmurs were heard. Therapy with digitalis was begun during this paroxysm of fibrillation, omitted at its end but resumed a month later because of some persistent dyspnea. He continued to take a daily ration of digitalis (1 grain [0.065 Gm.]) for the rest of his life (somewhat less than three years), but he was free from auricular fibrillation after that illness in the late winter of 1937.

In the fall of 1937 he was well except for dyspnea on little effort, with slight cyanosis. He had no angina pectoris and could lie flat without trouble. Examinations revealed no change except for rales and emphysematous breathing at the bases of both lungs which persisted thereafter and were at first interpreted as evidence of congestive heart failure and later correctly ascribed to a bronchial infection. In December 1937 and March 1938 the rales were still present at the bases of the lungs, and a slight presystolic murmur was heard at the cardiac apex. During the rest of 1938 and throughout 1939 Dr. Vickery remained much limited by his dyspnea. He had to give up golf and could do only a little gardening. He had had no angina pectoris for a long time, partly at least because he was relatively inactive because of his dyspnea.

On Dec. 8, 1939 examination revealed no change except that a definite apical diastolic murmur with presystolic accentuation was heard. A diagnosis of slight mitral stenosis was made despite the patient's 83 years. Knowing our interest in his cardiac condition, although himself skeptical of the diagnosis, he asked his family to permit a postmortem examination when the time should come.

During the early winter of 1939-1940 Dr. Vickery grew steadily weaker, more dyspneic and finally cyanotic despite all therapy, including oxygen, which would give him temporary benefit. He had no fever then. Toward the end of January he had a mild acute infection of the respiratory tract which he seemed at first to resist, but he finally died in coma on February 22, his death being due, it was thought, primarily to bronchopneumonia.

Postmortem examination by Dr. Tracy Mallory revealed bronchopneumonia at the bases of both lungs with a slight amount of bronchiectasis at the base of the left lung. There were extensive, dense, fibrous pleural adhesions. The heart was somewhat enlarged, weighing 425 Gm. The myocardium was firm and of normal color without scars. The left ventricular wall was thicker than normal, measuring 17 mm.; the right ventricular wall was 4 mm. thick. All the valves were normal except for the mitral, which showed a slight to moderate degree of stenosis with nodular adherence between the cusps, thickening and shortening of the chordae tendineae and scarring of the apexes of the two papillary muscles. The circumference of the mitral valve measured 7.5 cm. Little calcification was present in the deformed valve, ruling out a possible calcareous valvular disease. On the auricular surface of the most nodular part of the valve there was a fresh thrombus 3 mm. in diameter. The left auricle showed little or no enlargement. The left coronary artery showed moderate atheroma and narrowing of all its main branches, consisting of two rather small anterior vessels evidently taking the place of the usual large anterior descending branch, and of a small circumflex branch. The right coronary artery was large, with crescentic thickening of its wall but no significant narrowing. The mouths of the coronary arteries were fully patent and the ascending aorta was in fairly good condition, but the descending aorta from the arch to its bifurcation into the common iliac arteries showed extensive atheromatous deposits with much calcification. The pulmonary artery and great veins were normal. The liver was acutely congested but not cirrhotic; it weighed 1,800 Gm. The gallbladder, bile ducts, pancreas, gastrointestinal tract, spleen and urinary tract were essentially normal, except for diverticulosis coli.

In summary, there was found a moderate amount of noncalcific mitral stenosis and of arteriosclerosis with narrowing of the main branches of the left coronary artery, slight hypertrophy of the left ventricle, extensive sclerosis of the descending aorta, and bronchopneumonia in both lungs with bronchiectasis at the base of the left lung.

The foregoing is interesting and important evidence of the ability of the heart to withstand the strain of a moderate amount of mitral stenosis even in advanced age. It is probable that the rheumatic heart disease, for the pathologic picture is typical of such, developed in early childhood when he was in "delicate health" for a year but never progressed to a crippling degree, nor was there evidence of recurring rheumatic infection to trouble him. It is of interest that a child of his died of rheumatic heart disease at 15, but there was no story of Dr. Vickery's having been ill at that time. He was of fairly tough stock except for the malignant disease of his two sisters and the hypertension suffered by his father, a tendency to the latter evidently being an inherited characteristic of his own.

The stenosis of the mitral valve was not of the fishmouth or buttonhole variety. It was not even extensive enough to cause an appreciable enlargement of the left auricle, either ante mortem or post mortem, or of persistent auricular fibrillation, and only occasionally, when the flow of blood was speeded up or careful search was made, was the characteristic mitral diastolic murmur heard.[9] Evidently there was just enough mitral stenosis to diagnose but not to worry about clinically. In his case, therefore, and we dare say in many others, the mitral stenosis may be regarded as largely of academic interest, provided rheumatic reactivation does

9. It is unlikely also that the mitral stenosis in Dr. Vickery's case played any important part in the causation of his angina pectoris.

not take place. It is possible but not probable that Dr. Vickery's "rheumatic heart disease" developed late in his life. If it did, it is equally noteworthy.

The most interesting considerations of all in the case of Dr. Vickery were his own medical achievements and opinions about rheumatic heart disease. He graduated from Harvard College in 1878 and from the Harvard Medical School in 1882, and became one of the leaders of his generation in internal medicine in this country. He was house pupil and later for many years one of the medical visiting physicians at the Massachusetts General Hospital. He studied for a year, from 1883 to 1884, at Leipzig and Vienna and taught clinical medicine thereafter at the Harvard Medical School. He also conducted a large consulting practice. An able teacher and clinician, he translated Strümpell's textbook of medicine in 1886; this not only was the leading work on the subject here until Osler's book appeared in the nineties but went through four editions, the last in 1911. Among other writings, there appeared the following observations of special immediate interest to us on the prognosis in heart disease by him in collaboration with Whittier and Greene.[10]

Citing Leyden the authors stated that the prognosis is more favorable than was formerly regarded.

"In mitral disease, only about 2 per cent of the cases die suddenly. In a considerable number of cases the length of life is not essentially shortened by the disease" (p. B 28).

"Valvular lesions may cause no subjective symptoms, the disease being discovered incidentally. It is wrong to give such a patient a gloomy prognosis. . . . Again, the less the hypertrophy (or dilatation), the more favorable the prognosis" (p. B 32).

"One woman had suffered from mitral stenosis for twenty years, and during that time had borne seven or eight children, and she was now in pretty much the same condition as before" (p. B 37, quoting G. S. Middleton).

The authors also referred (p. 36) to the clearing of cardiac murmurs after the clearing of rheumatism and (p. 35) to the milder valvular lesions in cases of chorea.

Not knowing of his own heart disease until the end of his life, Dr. Vickery exemplified in his own person the good prognosis that may exist in mitral stenosis.

CASE 2.—Harriet Hull, aged 82, a spinster, entered the Massachusetts General Hospital on Sept. 22, 1939. She was known to have had rheumatic fever at 50 with mitral stenosis thereafter, and she had been "in and out of heart failure" several times for a number of years prior to admission to the hospital. She had been receiving digitalis and diuretic therapy and had lapsed into unconsciousness a few hours before arrival. Examination on admission revealed that the heart was moderately enlarged, with a loud mitral diastolic murmur at the apex. The rhythm was regular, although she had had paroxysms of auricular fibrillation in the past. The blood pressure was 120 mm. of mercury systolic and 60 mm. diastolic. There were rales at the bases of both lungs and slight pitting edema of the legs. An indurated mass in the left breast was thought to be carcinoma. She failed to respond to therapy; the lungs became increasingly congested and the coma more pronounced. She died a few hours after entry.

At postmortem examination there were signs of congestion in the lungs, slight cerebral edema, chronic vascular nephritis, carcinoma of the breast and chronic rheumatic endocarditis of both the mitral and the aortic valves. The mitral valve was considerably thickened, partially calcified and moderately stenosed. The circumference of the orifice measured approximately 6 cm. The heart weighed 290 Gm. The coronary arteries showed only minimal atherosclerotic plaques.

CASE 3.[11]—Frank Hampton, aged 77, unemployed, was first seen in the outpatient department of the Massachusetts General Hospital because of exertional dyspnea, slight swelling of the ankles and failing vision (cataracts). He had had rheumatic fever at 52. A diagnosis of rheumatic heart disease with aortic stenosis and regurgitation, mitral stenosis and auricular fibrillation was made. His blood pressure was 130 mm. of mercury systolic and 65 mm. diastolic. The last four years of his life were spent quietly and comfortably at the Home for Aged Men. His ventricular rate was controlled by maintenance rations of digitalis. He died at the age of 81 (Dec. 16, 1932), primarily of thrombosis of the superior mesenteric artery, with resulting gangrenous enteritis and fibrinous peritonitis.

At postmortem examination the heart weighed 575 Gm. The pericardium was completely obliterated by old fibrous adhesions. The mitral valve showed well marked stenosis. The orifice was firmly fixed in a patent position and measured 1.5 by 2 cm. The valvular cusps were thickened and fused. The aortic valve also showed stenosis and fixation—the orifice measured 1 cm. in diameter. The coronary arteries showed only slight atherosclerosis. Microscopic sections of the myocardium revealed a great increase in fibrous tissue but no evidence of rheumatic activity. Cerebral arteriosclerosis and areas of cerebral softening were found in addition to the intra-abdominal condition (mentioned previously) which caused his death.

CASE 4.[12]—Augusta Alexander, aged 83, a housewife, a Russian Jewess with normal family and past histories, was sent into the Beth Israel Hospital in a moribund state by her local physician on Nov. 19, 1933. Her illness had begun about ten weeks before with increasing dyspnea, orthopnea and swelling of the ankles. For the six weeks before admission the patient had been confined to bed. Physical examination revealed that she was well developed and well nourished; she had deep cyanosis of the face and was gasping for breath. The pupils were round, equal and regular and reacted normally. There were bilateral ripe cataracts. The thyroid gland was not enlarged. There was a slight increase in the anteroposterior diameter of the chest. Respirations were rapid and shallow and breath sounds normal. Tactile and vocal fremitus could not be tested. There was a moderate number of rales in the bases of both lungs, especially the right. The heart was moderately enlarged; the sounds were slow, faint and of poor quality. There was a loud, harsh systolic murmur heard best at the apex. The abdomen was soft and slightly distended. The edge of the liver could be felt 5 cm. below the costal margin. There was slight pitting edema over the sacrum with moderate edema over the legs up to the knees. There was moderate peripheral arteriosclerosis. All the deep reflexes were equal and active. The blood pressure was 130 systolic and 70 diastolic. The patient died suddenly less than an hour after admission.

At autopsy there were seen a moderately enlarged heart (525 Gm. in weight with thick right and left ventricular walls, 15 and 25 mm. respectively); a calcified mitral valve which was also greatly stenosed, admitting one finger with difficulty, although the circumference measured 7.5 cm.; a calcified, moderately stenosed aortic valve (5.7 cm. in diameter); slight pulmonary emphysema; an extensive antemortem clot filling the main trunk of the pulmonary artery and extending into both branches; primary carcinoma of the right lung; an enlarged nutmeg liver; a scarred gallbladder; two duodenal ulcers, one of which was penetrating the liver and the other the pancreas; moderate arteriosclerosis, peripherally and of the coronary arteries, and several hundred cubic centimeters of fluid in each pleural cavity.

Thus, we have in recent years come across 4 patients with proved mitral stenosis in Boston who survived 80 years and who were in fairly good health till old age. Doubtless there have been others here and elsewhere undiscovered, partly because it is not common to bother about autopsies in extremely aged persons

10. In the Section on Diseases of the Heart, Pericardium and Arteries in Sajous, Annual of the Universal Medical Sciences, Philadelphia, 1890.

11. Permission to include this case was given by Dr. R. S. Palmer.

12. Permission to include this case was given by Drs. Harry Derow and Harry Levine.

and partly because lesions of this sort have not been looked for with special care after the age of 70. Four reasons for such longevity may be mentioned: first, a relatively mild to moderate degree of the mitral stenosis in some of the cases as in that of Dr. Vickery; second, the possible late development of the rheumatic heart disease suggested by rheumatic fever at 50 or after in cases 2 and 3; third, a relatively quiet and careful life, as illustrated in cases 2 and 4, and fourth, an ancestral inheritance of longevity probably present in all. It would be of interest to attempt a more careful analysis of these factors with more extensive material.

That even extensive mitral stenosis, more advanced than that seen in these 4 cases, is compatible with survival to old age may be added here with the striking example we encountered only a few weeks ago: Mrs. A. McG., aged 73, died of bronchopneumonia with but little heart failure. She had lived a sheltered life after a youth in which she had been a singer. She showed at autopsy a narrow fish-mouth mitral valve with an extreme degree of stenosis. The heart weighed 310 Gm.

SUMMARY

Four patients with mitral stenosis of moderate degree, proved at autopsy, survived the age of 80 years, two men aged 83 and 81 and two women aged 82 and 83. The first patient of the group, Dr. Herman F. Vickery, unaware of his heart trouble, carried on an active and eminently useful medical career, was a leader of his generation and himself wrote on the good prognosis of many cases of rheumatic heart disease.

ALOPECIA AREATA

AN APPRAISAL OF ENDOCRINE FACTORS IN ITS CAUSATION

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Changes in growth and distribution of hair occur frequently among patients who are afflicted with diseases of the endocrine organs. Probably for this reason it has almost become accepted practice for physicians to assume that the cause of alopecia areata can often be found in the endocrine system. It is further supposed that effective therapeutic results could be achieved if the offending gland were identified and appropriate endocrine treatment instituted. To test the validity of these assumptions this study was undertaken.

We reasoned that if the foregoing premises were correct there would be a high incidence of unmistakable endocrine diseases in a series of cases of alopecia areata. Furthermore, if glandular abnormalities were responsible for the alopecia, the evidence of disturbed endocrine function would be most marked in the severest cases, that is, the cases of so-called malignant or universal alopecia, in which not only most of the scalp hairs and body lanugo are shed but also the secondary, sexually conditioned hairs of the axillas, pubis and beard. If, for example, alopecia areata was the result of insufficiency of the anterior lobe of the pituitary body, one might expect to find instances of chromophobe tumor of the pituitary body in a series of cases of universal alopecia, because such tumors are often associated with high grade insufficiency of the anterior lobe of the pituitary body. Likewise, if the alopecia was the consequence of insufficiency of the thyroid gland, one would expect a frequent association with myxedema.[1] The same reasoning applies with equal validity to the incrimination of any one of the ductless glands as causative agents of universal alopecia.[2] For a proper evaluation of endocrine factors in the causation of the disease, we have therefore studied the records of 138 patients who were examined at the Mayo Clinic because of generalized or universal alopecia areata.

From the Division of Medicine (Dr. Kepler), Mayo Clinic.

SURVEY OF MATERIAL

The sex incidence and age of onset of alopecia in our cases are given in the accompanying table. Of interest is the fact, already noted by other authors, that the sexes are almost equally represented in childhood, but that among adults the disease is more than twice as common in men as in women. Whether the greater frequency in men reflects a constitutional vulnerability of the pilar system, which accounts also for the preponderance of premature, senile and seborrheic alopecias in the male sex, cannot be determined. Attention is called to the incidence of cases beginning in the first three decades of life, comprising 70 per cent of the patients, and particularly to the number of cases in the first decade, during which time the endocrine processes that are concerned with sexual maturity are to some extent dormant and relatively unimportant physiologically.

A familial history of alopecia areata was elicited in 6 cases, but only once was identical universal alopecia reported in another member of the family. Infectious diseases, such as influenza, typhoid, scarlet fever or malaria, preceded the onset of alopecia in 14 cases. A history of antecedent trauma to the skull was provided by 4 patients. Diabetes mellitus complicated the alopecia in only a single instance. Sudden excitement or fright, anxiety and nervous exhaustion were possible predisposing factors in a small proportion of the cases.

The body build of only a few patients was remarkable. Eight were obese and an equal number were underweight. A physique which was characteristic of any one of the endocrinopathies, such as that of the Froelich, Cushing or Simmonds syndrome, or acromegaly, gigantism or infantilism, was not encountered in a single instance.

Menstrual abnormalities occurred in seven women in the form of irregular or scanty flow or both. This is not a significantly large group, and, as far as the menstrual history can be regarded as an adequate practical measure of the endocrine status, there is little evidence of hormonal abnormality in the women studied. In 1 case complete amenorrhea developed at the age of 24 years, nine years after the onset of loss

1. These examples were chosen because the anterior lobe of the pituitary body and the thyroid gland most frequently have been thought to be the offending organs in cases of alopecia areata. In the case of the anterior lobe of the pituitary body, the assumption has been made tacitly that the disturbance of function is one of hyposecretion rather than one of hypersecretion, whereas for the thyroid gland both hyperfunction and hypofunction have been invoked.

2. There are two possible loopholes in this logic: First, one may conjecture that the "pilary function" of a multifunctioning endocrine gland (such as the anterior lobe of the pituitary body) may be impaired, even though the other functions remain relatively intact. Occasionally one does see clinical examples of such dissociated disturbances of function. For example, the first symptom of a chromophobe tumor of the pituitary body may be amenorrhea. In most instances, however, sooner or later as the disease progresses, other functions of the anterior lobe of the pituitary body become deranged; and these derangements eventually become evident clinically. But among patients who are afflicted with alopecia areata there is no such progression of symptoms. Second, one may suppose that alopecia areata arises from the disturbance of an endocrine organ as yet unidentified whose primary function is concerned with the growth of hair. This supposition can be dismissed without further comment.

of hair. Alopecia in 1 case began at the menarche and in 2 cases during the climacterium. It is of interest that, where we have the pertinent information, the menstrual cycle of the girls whose alopecia started in childhood had a normal initiation at puberty, without affecting the growth of hair. In other words, recovery did not take place with the endocrine readjustments of puberty and adolescence.

The variable influence of pregnancy is of extreme interest in certain cases. Each of 6 patients experienced a substantial regrowth of hair during one or more pregnancies (a phenomenon which has been attributed to stimulation by endocrine secretions of the fetus [3]), only to have the hair fall shortly after parturition. On the other hand, 2 patients observed their first indication of alopecia during pregnancy, and 2 others in the puerperium. It may be added that the very fact that certain women did become pregnant speaks for fairly normal function of the pituitary, ovarian and thyroid glands.

Infertility was a complaint of 2 women, and repeated spontaneous abortions of a third.

Although gonadal abnormalities were observed among several of the male patients, evidence of consequent pathologic decrease of hormonal activity must be regarded as far from conclusive, save for one exception: A youth aged 17 was diagnosed as having bilateral cryptorchism, and no testicular tissue could be demonstrated at operation. Unilateral cryptorchism was present in 3 boys, unilateral testicular atrophy, the result of orchitis complicating mumps, was found in 1 adult, and a mild grade of bilateral testicular atrophy of unknown origin in another. One patient had had orchiectomy performed in the course of herniorrhaphy eighteen years prior to the beginning of alopecia. Five men, none of them in the foregoing group, complained of decreased libido.

The basal metabolic rate was investigated in 62 cases. Rates of less than —10 per cent occurred in 15 cases, the lowest reaching —26 per cent; but there were signs of myxedema in only 2 cases, and treatment with thyroid in neither case caused a restitution of hair despite complete control of the myxedema. The frequency of low metabolic rates in alopecia areata has been observed by others.[4] This finding should be interpreted in the light of the circumstance that a low metabolic rate occurs not uncommonly even in the absence of myxedema or other clinical evidence of insufficiency of the thyroid gland. Certainly the fact is irrefutable that the vast majority of patients who have subnormal metabolic rates with or without myxedema do not have alopecia areata.

Elevated rates of basal metabolism were recorded for 2 patients, whose readings were + 16 and + 19 per cent respectively, but in whom no other clinical evidence of hyperthyroidism was demonstrable. One patient had had thyroidectomy for exophthalmic goiter seven years before loss of hair occurred. Three patients presented nodular goiters without signs of hyperthyroidism, and in 2 others a slight diffuse enlargement of the thyroid gland was palpable.

Roentgenograms of the sella turcica in 22 cases disclosed no pathologic features.

Anomalies of pigmentation have frequently been reported in association with alopecia areata, suggesting to some authors, for reasons not entirely clear, supportive evidence for endocrine disease. Vitiligo was present in 9 of our cases and chloasma in 3. The white fuzzy regrowth which commonly occurs in alopecia areata reflects the disappearance of pigment from the region of the hair bulbs, as Woringer and Thée [5] have shown. Disturbance of nail growth and structure (pitting, longitudinal furrowing, thickening or thinning of the plates) was frequently observed.

Syphilis was diagnosed in 7 cases, but a definite relationship between syphilis and alopecia could not be established, nor did antisyphilitic therapy in these instances influence the hair disease in the slightest. We do not agree with the view emphasized by French authors that syphilis is an important factor in the causation of alopecia areata.

COURSE AND PROGNOSIS

Patchy alopecia, in one or more attacks limited as a rule to the scalp, nearly always precedes generalization of the baldness. In some cases temporary recovery takes place between attacks; in others the patches of alopecia gradually increase in number, progressing over a period of months or years, to cover the entire body; or, rarely, the loss of hair is rapid, requiring no more than twenty-four hours for complete and total exfoliation. Even the so-called sensory hairs of the nose and ears may be lost, and in at least 1 of our cases a hairy pigmented nevus was observed to have become entirely devoid of hairs.

Alopecia Areata Universalis: Age of Onset and Sex Distribution

Age, Years	Total Cases	Men	Women
0- 4	12	6	6
5- 9	18	10	8
10-14	15	8	7
15-19	18	14	4
20-29	34	21	13
30-39	19	16	3
40-49	18	11	7
50-59	3	2	1
60-69	1	1	..
Total	138	89	49

In many cases an irregular slight growth of lanugo, perhaps interspersed with a few straggling definitive hairs, makes an appearance from time to time, remains for a variable period, and then falls out wholly or in part. Seldom does the regrowth amount to more than a pale silky fuzz over the scalp, although occasionally sparse patches of dark terminal hairs will emerge. Often a seasonal stimulation is noted in the tendency for this abortive growth to occur during the summer months or during a sojourn in a warm climate. In many other cases, however, there is not the slightest sign of the return of hair. The longest duration of the disease in any case of our group is forty-five years. Frequently it lasts during the remainder of a lifetime. Usually the general health is good, both at the onset and after fresh episodes of baldness, and this fact is in itself of no little endocrine significance.

A presumably permanent regrowth of hair occurred in only 4 cases after two to ten years of the disease. That a new growth may not remain, even though present in normal amount, is evidenced by the experi-

3. Strandberg, James: Haut und innere Sekretion, in Jadassohn, Josef: Handbuch der Haut- und Geschlechtskrankheiten, Berlin, Julius Springer, 1929, vol. 3, pp. 211-214.

4. Feit, Hermann; Throne, Binford, and Myers, C. N.: Alopecia Areata: Its Relation to Metal Retention, in Comptes rendus des séances, VIII[e] Congrès international de dermatologie et de syphilographie, Copenhagen, Engelsen & Schrøder, 1930, pp. 732-737.

5. Woringer, F., and Thée, R.: Contribution à l'étude de la pigmentation des plaques, péladiques, Ann. de dermat. et syph. **6**: 1016-1053 (Oct. 23) 1935.

ence of 3 other patients, who reported complete restoration of hair, followed, after an interval of two years or less, by recurrence of alopecia. The small probability of favorable permanent results characterizes alopecia universalis and well merits for the disease the designation "malignant." [6]

Our experience has not convinced us that treatment of any kind has been of avail in this condition. Moreover, many of our patients, prior to coming to the clinic, had been treated elsewhere with "glandular" preparations of various kinds, administered orally or by injection, without appreciable benefit to the hair. There is no doubt that after an intensive course of injections of anterior pituitary or of estrogenic substance a diffuse, fine, downy growth on the scalp is sometimes observed, but we have yet to see the total return of normal terminal hairs as a result of such treatment. Thyroid has been given to persons with and without low basal metabolic rate, without influencing hair recovery. Other methods of treatment have no more to recommend them. We are unfortunately not aware of the factors which, in exceptional cases, contribute to a regrowth of normal hair.

COMMENT

Certain fundamental endocrinologic concepts [7] may be briefly reviewed for an appreciation of this problem. Function of endocrine secretion is of two types: (1) coordination of organs to the needs of the organism as a whole and to its external environment, and (2) maintenance of physiologic chemical processes within prescribed limitations. Hormones of the second type may be catalytic in character; that is, they hasten processes which would proceed slowly in their absence. It is important to recognize the fact that these reactions do continue in the absence of the hormone but that their velocity is reduced under such circumstances. Growth of hair continues to a certain extent after the extirpation of any one of the organs of internal secretion; it is a primitive characteristic of the species. Unquestionably certain features of hair growth depend on endocrine factors, but whatever influence the endocrine system may have on this growth is probably regulatory rather than absolutely determining. This does not imply that the pilary system may not, per se, become intrinsically deranged and cease to function, even though the stimulating effects of the endocrine system are adequate. The relationship is complex, and we must concur in the opinion of Danforth [8] that satisfactory information concerning the influence of the endocrine organs on hair growth in man is lacking at present.

SUMMARY AND CONCLUSIONS

A review of 138 cases of universal alopecia fails, in general, to disclose gross clinical evidence of any consistent functional abnormality of the internal secretions. Our data indicate that at present the assumption of an endocrine causation for this condition is unwarranted by the facts. The instances in which concomitant features of definite endocrine disease occur are relatively few, and the associations appear to be incidental rather than causal. These conclusions, we feel, should apply even more forcibly to the common form of alopecia areata, in which the loss of hair is much less extensive. The unfavorable outlook for regrowth of hair in universal alopecia is emphasized by the fact that only 4 of the patients in this group recovered completely. It is our opinion that endocrine treatment, at least in the present state of its development, is ineffectual.

6. Nobl, G.: Ueber das Schicksal maligner Alopezien, Wien. klin. Wchnschr. **48**: 205-207 (Feb. 15) 1935.

7. Kepler, E. J., and Randall, L. M.: Fundamental Concepts in Endocrine Diagnosis and Therapy, M. Clin. North America **24**: 941-952 (July) 1940.

8. Danforth, C. H.: Physiology of Human Hair, Physiol. Rev. **19**: 94-111 (Jan.) 1939.

THE EVALUATION OF PREMARITAL LEGISLATION

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During the past four years a number of state legislatures have imposed restrictions preventing the marriage of persons found to be afflicted with syphilis. This has been accomplished by the amendment of existing laws or the setting up of new statutes. The requirements to be met vary greatly in the twenty-six states which have adopted this type of legislation. In general, the issuance of a license is based on the result of physical examination, laboratory tests or in some instances the mere certification of freedom from venereal disease by a registered physician.

The medical profession has not been unanimous in its sanction of such legislative efforts. The most definite expressions of disapproval have come from eminent syphilologists.[1] A summary of the dissenting opinion indicates the following objections: (*a*) Too great a reliance is placed on the results of blood examinations. (*b*) Many patients who have positive reactions of the blood are probably noninfectious. (*c*) Persons with congenital syphilis would be prevented from marrying, although they are probably noninfectious. (*d*) Technical or biologic false positive reactions may place the stigma of syphilis on the noninfected. (*e*) Such legislation is a punitive measure and an abridgment of personal rights. (*f*) The medical profession was not sufficiently consulted in drafting the laws. (*g*) The public does not understand the reason for such legislation.

STATISTICAL SUMMARY

Data on the actual number of cases of syphilis detected by means of the premarital dragnet is as yet fragmentary. It was felt desirable to summarize at this time such figures as were available in the literature and to add to these the results observed in West Virginia during the first year of operation of the premarital law. A summary appears in the table.

Several of the reports cited in the table included "estimates" of the number of positive reactions discovered by laboratories not actually reporting. In this discussion such theoretical figures were disregarded. The tabulation therefore included only figures that are susceptible of verification. The period covered by the report extended from Jan. 1, 1936 to June 1, 1940 but varies in the different states depending on the date on which the respective premarital statutes became effective. The criticism may be offered that I am reporting series of positive reactions of blood tests only and not necessarily proved cases of syphilis. The justness of this criticism is acknowledged. It would be most desirable in such a study as this to report the exact number of cases of infectious syphilis among the positive reactors included in my compilation. Such

From the Medical Division of the Wheeling Clinic.

1. Stokes, J. H., and Ingraham, N. R., Jr.: Syphilis and the Law, J. A. M. A. **112**: 1133 (March 25) 1939. Nelson, N. A.: Marriage and the Laboratory, Am. J. Syph., Gonor. & Ven. Dis. **23**: 288 (May) 1939. Moore, J. E.: Premarital and Prenatal Examination Laws for Syphilis, Am. J. Syph., Gonor. & Ven. Dis. **23**: 386 (May) 1939.

data are not at present available and from their very nature are not likely to become available in the near future. It is necessary, therefore, to depend on laboratory statistics for an evaluation of the results of premarital legislation.

Tactful questioning indicates that the majority of the group presenting themselves for examination assumed that they were free from syphilis. Persons who know that they are infected do not apply for premarital examination in states having such laws.[2] It is interesting to note the eventual fate of those refused marriage licenses. New Jersey reported on 206 positive reactors. Of these 113 were judged infectious and refused certificates, 71 gave up marriage, 18 were married out of the state and the action of the remainder is not known. Three months after the examination 135 of the original group were found to be under treatment.

A report [3] from Connecticut covered the years 1936 to 1939, inclusive. During this four year period 596 cases of syphilis were discovered among premarital applicants and the applicants were given treatment. Many of these persons were apparently considered noninfectious and were issued certificates after signing an agreement to accept adequate treatment. Cases of congenital syphilis in patients under 1 year of age totaled 38 in 1936, 24 in 1937, 16 in 1938 and only 11 in 1939. It is hardly justifiable to attribute this decrease in the incidence of congenital syphilis to the enforcement of the premarital law in Connecticut, but the progressively declining figures are at least suggestive.

THE WEST VIRGINIA REPORT

As indicated by the figures recorded in the accompanying table the incidence of syphilis in the premarital group in West Virginia (2.4 per cent) would appear to be higher than the incidence shown in any other state report now available. This is of interest, as West Virginia is the first Southern state to present any statistics of this type.

During the first six months of operation of the law in West Virginia (1,600 cases) the incidence of positive reactions was 4.2 per cent. It has steadily declined to the present figure (2.4 per cent). It is probable that as the accumulation of a larger number of examinations provides a broader base for analysis the incidence in this state will approximate the average incidence (1.3 per cent).

The private laboratories in West Virginia continue to perform the major portion of the premarital blood examinations. The state hygienic laboratory carried out 3,807 (3.1 per cent positive) examinations. Thirty-seven of the fifty-two private "approved" laboratories replied to the questionnaire and reported the examination of 6,116 (1.9 per cent positive) blood specimens. This is in contrast to the reports from other states, where most of the laboratory work has been done by city and state laboratories.

The premarital law has been well received by both the public and the physicians of West Virginia. I am aware of no major difficulties which have arisen as the result of its enforcement. The provisions of the statute leave much to the judgment and discretion of the individual physician. I believe that the medical profession has assumed these obligations and is carrying out the letter and spirit of the law in a sincere and conscientious manner.

2. Edwards, Mary S.: Premarital Examination Laws in Operation, J. Social Hyg. **26**: 217 (May) 1940.
3. Talbot, H. P.: Four Years of Premarital Blood Test Law, Connecticut Health Bull. **54**: 211 (Aug.) 1940.

GENERAL COMMENT

The detection and adequate treatment of every person with syphilis in the general population is acknowledged to be a desirable goal toward which to direct one's efforts. There is no reason to believe that infectious syphilis does not exist in the population of marriageable age. It would seem logical, in view of the far-reaching effects of conjugal and congenital syphilis, that case finding in the premarital group should be even more necessary than in the general population.

The figures presented previously would indicate that 9,017 persons preparing to marry presented at least laboratory evidence of syphilitic infection. These figures are from thirteen states only and cover a relatively short period of time. In the age group under consideration infection is necessarily of fairly recent origin. This would indicate the likelihood of a high proportion of potential infectiousness in those cases unearthed by the premarital dragnet. It is reasonable to suppose, therefore, that a definite percentage of the positive reactors were capable of transmitting syphilis to their prospective marital partners. It is impossible at present to estimate this proportion. When one considers the total number of syphilitic persons contemplating matrimony, as revealed by this incomplete report, it is impossible to escape the conclusion that the operation of premarital legislation has already prevented a large number of conjugal infections as well as the production of syphilitic offspring. If the accumulation of further data confirms this preliminary impression the objections previously recited must be considered to be of relatively slight importance, valuable principally as suggestions for the improvement of existing statutes.

Results of Premarital Legislation in Thirteen States *

State	Law in Effect on	Total Number Examined	Number with Syphilis †	Percentage with Syphilis
California	9/19/39	23,684 (Sept. 29-Dec. 31, 1939)	404	1.7
Colorado	10/10/39	2,973 (1939)	44	1.5
Connecticut	1/ 1/36	20,424 (1939)	207	1.01
		17,732 (1938)	196	1.28
		16,601 (1937)	112	0.85
		14,601 (1936)	81	0.6
Illinois	7/ 1/37	49,271 (1939)	577	1.2
		39,435 (1938)	782	1.9
		30,298 (July 1-Dec. 31, 1937)	479	1.5
Michigan	10/29/37	5,150 (January 1940)	68	1.3
		41,762 (1939)	368	0.9
		34,439 (1938)	423	1.2
		3,828 (November-December 1937)	52	1.4
New Hampshire	10/ 1/38	14,420 (Oct. 1, 1938-March 8, 1940)	102	0.8
New Jersey	7/ 1/38	42,944 (July 1938-March 1939)	624	1.4
New York (upstate)	7/ 1/38	36,459 (July-December 1939)	541	1.5
		58,883 (6 mo. 1938)	797	1.4
		141,148 (1939)	2,342	1.7
North Dakota	3/13/39	5,641 (July 1939-February 1940)	25	0.4
Rhode Island	4/28/38	816 (January-February 1940)	5	0.6
		8,782 (1939)	96	1.1
		4,734 (April-December 1938)	75	1.6
South Dakota	7/ 1/39	4,885	35	0.7
Wisconsin	.....	46,431	295	0.6
Milwaukee	.....	2,568 (23 mo.)	49	1.9
West Virginia ‡	5/26/39	9,923 (12 mo.)	238	2.4
		677,832	9,017	1.3

* Tabulation of Edwards [2] corrected and brought up to date.
† All cases labeled "doubtful" have been excluded in the totals.
‡ It is probable that the term "positive" was employed to include all degrees of positivity in these figures.

The administration of premarital laws requires the application of common sense by conscientious physicians. The fact that some of the legislation is imperfect does not mean that it is undesirable. It provides a valuable means of detecting syphilis in a group in which such detection is of the utmost importance.

SUMMARY

1. Reports of 677,832 premarital blood examinations have been received from thirteen states; of the persons examined, 9,017, or 1.3 per cent, gave positive reactions.

2. A high proportion of the persons found to have syphilis were unaware of their infection.

3. The incidence of syphilis in the premarital group is fairly uniform throughout the country. It is apparently lower than the incidence of cases in the general population. This difference may be apparent rather than real, as persons who know that they have syphilis probably do not apply for examination.

4. The premarital law in West Virginia has proved acceptable to a large majority of the medical profession and the general public.

5. It is believed that the favorable results accruing from the enforcement of premarital legislation far outweigh the admitted theoretical objections which have been advanced.

58 Sixteenth Street.

GRAFTS OF PRESERVED CARTILAGE IN RESTORATIONS OF FACIAL CONTOUR

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DETROIT

Our purpose in this paper is to consider the materials that may be used as the foundation on which to reconstruct deformed faces. A brief presentation is made of the experiences encountered by us with 100 consecutive cases in which grafts of preserved homocartilage were employed. It is felt that this subject is of importance at this time because the conclusions reached are applicable in war injuries as well as in industrial and domestic accidents.

HISTORY

Medical literature for the past century is dotted with reports of various materials that have been used as the supportive structure on which to rebuild facial contour. Among the materials mentioned may be found such items as ivory, bronze, steel, paraffin, silver, celluloid, fat,[1] cartilage,[2] dermis,[3] fascia, bone and practically anything that may be formed into a shape to fill out the defect in question.

By a process of elimination, based on results obtained, there has been a gradual tendency to discard all inert substances and all tissues except those tissues of mesodermal origin. In Peer's [2] most recent work, he stated that "unfortunately the human body resents the presence of foreign material, and when it is used there occurs a slow but progressive action in the surrounding host tissue which eventually results in expulsion of the implant."

The use of inert materials always seems to have a generally unfavorable termination, but the transplantation of tissues from one organism to another seems to have promise, since there is a difference in degree of reaction of different tissues in different environments. It is this difference of "degree" of reaction wherein lies the hope of scientifically using a material not of the host (literally a foreign substance) for the purpose of reconstruction.

Since transplants of the type under discussion are for the replacement of mesodermal structures of a supportive nature (that is, bone and cartilage), then it is logical to assume that bone and cartilage are the materials to be considered for replacement.[4] Of the two, cartilage possesses the lower metabolic rate—not even requiring blood vessels to carry on its metabolism.[5] It is this low metabolic rate and similarity of chemical structure to other mesenchymal tissues that make bone and cartilage the only substances that can be rightfully considered in the peculiarities of reconstructive surgery. With the mechanical advantages favoring cartilage, together with the physiologic advantages of a lower metabolic rate and a less highly developed differentiation of the tissue itself, it may be assumed that the question resolves itself into one of how cartilage may be used to the best advantage.

INDIVIDUALITY DIFFERENTIAL

When tissues are transplanted from one organism to another, or merely transferred from one position to another in a given host, there is a difference in degree of reaction. To discuss this phenomenon in the light of existing literature, a brief review of the terminology is necessary.

By transplantation is meant that there is complete or partial separation of a piece of tissue or organ from its normal connection and its transfer to a different place, either in the same individual (autograft), into another not directly related individual of the same species (homograft) or into an individual belonging to a different species or class of animal (heterograft).[6]

All tissues possessed by a given individual have certain chemical characteristics in common. Such things as immune bodies, hormones, vitamins, agglutinins and waste products, together with the inorganic chemical components, may enter this classification, but they do not constitute its major component. As far as the specific chemical characteristics are concerned, there may be an interchange of position of tissues within the individual without any undue reaction from these specific entities.

The chemical characteristics that are held in common by all tissues of a given individual are termed collectively the individuality differential. This common characteristic distinguishes one individual from all others, no matter how closely related otherwise, in a manner analogous to finger prints that set each man aside from his fellows.[7]

1. Gurney, C. E.: Experimental Study of the Behavior of Free Fat Transplants, Surgery **3**: 679, 1938. Figi, F. A.: Depression of Frontal Region, Fat Transplant, S. Clin. North America **11**: 831, 1931.

2. Peer, L. A.: Types of Buried Grafts Used to Repair Deep Depressions in the Skull, J. A. M. A. **115**: 357 (Aug. 3) 1940. Pierce, G. W., and O'Connor, G. B.: Refrigerated Cartilage Isografts, Surg., Gynec. & Obst. **67**: 796, 1938.

3. Peer, L. A., and Paddock, Royce: Histologic Studies on the Fate of Deeply Implanted Dermal Grafts, Arch. Surg. **34**: 268 (Feb.) 1937. Straatsma, C. R.: Use of the Dermal Graft in the Repair of Small Saddle Defects of the Nose, Arch. Otolaryng. **16**: 506 (Oct.) 1932.

4. Ullman, E.: Dekortisation des Hodens nach vorausgegangener beiderseitigem Steinachschem und beiderseitigem Doppplerschen Verfahren, Wien. med. Wchnschr. **79**: 1227, 1929.

5. Maximow, A. A.: A Text Book of Histology, Philadelphia, W. B. Saunders Company, 1930, p. 189.

6. Leob, Leo: Transplantation and Individuality, Physiol. Rev. **10**: 547, 1930.

7. Loeb, Leo: The Grafting of Tissues into Nearly Related Individuals in the Rat and Mode of Inheritance of Individuality Differential, J. M. Research **33**: 393, 1918; The Biological Basis of Individuality.[6]

The further removed the relationship of individuals the fewer chemical characteristics the individuals have in common, and in attempting transplantation of tissues between individuals the presence of these unlike chemical characteristics in donor and host is the basis for reaction. Axiomatically, then, the more distant the relationship, the more violent must be the reaction when the dissimilar tissues are brought together.

Since all possible gradations of relationships between donor and host are found, then, correspondingly, all possible intensities and kinds of reactions may be expected when tissues are transferred.

To carry the point one step further, it may be said that the less developed the organism, the more likelihood of success with transplants of tissue. Without our going into the details as to methods, the works of Born,[8] Rand and Browne [9] and Ullman,[4] together with others, may be of assistance in understanding the problem in hand by our quoting their collective conclusions: "That, in general, transplantability increases with the ontogenetic and phylogenetic primitiveness of the organisms which serve as hosts and donors."

ORGAN AND TISSUE DIFFERENTIAL

When tissues are transplanted from one individual to another, a certain reaction is anticipated, owing to the chemical differences of the individuals themselves (i. e., individuality differential). If, for example, however,

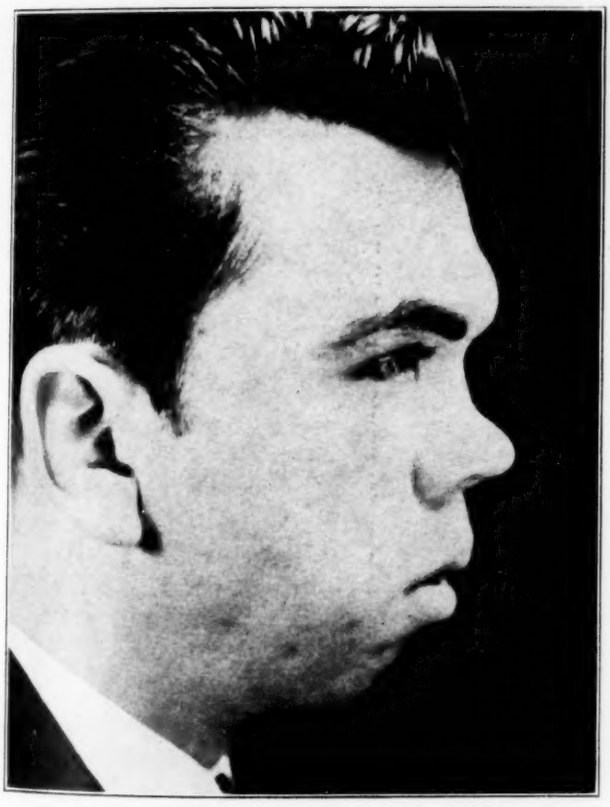

Fig. 1.—An early childhood injury, resulting in a septal abscess, caused this boy's saddle nose. The deformity was such that the normal air passages were restricted; the restriction may have been an etiologic factor in the underdevelopment of the chin. The resulting deformity was a decided handicap.

tissue from the thyroid is transferred from one individual to another and cartilage also transferred under the same conditions, the end results will not be the same.

The chemical characteristics of the individual will be the same toward one another, but the added reaction of the difference in chemical composition of the organs or tissues themselves will be added. In other words, the organ or tissue differential now enters the picture.

Fig. 2.—At one operation, the saddle nose and receding chin were reconstructed with preserved cartilage. Three large pieces were necessary to build out the chin, together with a dorsal and columellar strut to the nose. It would have been difficult to obtain the massive amount of cartilage necessary for this operation from the patient himself. It is felt that his chances in life have been greatly improved by the more pleasing facial configuration.

Success in transplantation of whole appendages, organs and massive pieces of tissue, as for example in experimental embryology on frogs, is not an indication of what will happen when like experiments are attempted in human beings or higher vertebrates. The lack of understanding in applying the knowledge gained from laboratory experiments to possible similar undertakings in human beings, such as the transplantation of ears from mother to son or the transference of fingers from one human being to another or other plastic procedures, is bound to lead to total failure [10] because it involves both individuality differential and organ and tissue differential. This one fact has led to many a sad and disheartening experience encountered by the plastic surgeon wherein a patient has demanded for himself results that might be obtained only in experimental animals. This disillusionment of the patient is made more tragic by the false hope instilled in him by the misguided enthusiasm of those erroneously interpreting the literature.

TOXINS DUE TO GRAFTS

Since the products of metabolism in transplanted tissue are toxic to the host, they are spoken of as autotoxins, homotoxins or heterotoxins, the appellation

8. Born, G.: Ueber Verwachsungsversuche mit Amphibienlarven, Arch. f. Entwchlngsmechm. d. Organ. **4**: 350, 1896-1897.
9. Rand, H. W., and Browne, E.: Inhibition of Regeneration in Planarian by Grafting, Proc. Nat. Acad. Sc. **12**: 575, 1926.

10. Loeb, Leo: The Biological Basis of Individuality, Science **86**: 1, 1937. Famulener, L. W.: On the Transmission of Immunity from Mother to Offspring, J. Infect. Dis. **10**: 332, 1912.

depending on the type of graft under consideration. Just which constituent or constituents make up the toxic products in this reaction is not clear, nor is their duration of activity definite.[11]

With the foregoing information as a basis, an explanation for the various tissue reactions may be

Fig. 3.—This girl, aged 15, refused to go to school because of the shape of her nose. The deformity resulted from a fall two years previously in which her nose was fractured and the septal support lost.

stated as follows: Different tissues, including cartilage, react differently when transplanted from one organism to another or when merely transplanted in different locations in the original host, both in experimental animals and in human beings, for the following reasons: first, the difference in the chemical characteristics that go to make up the individual—the individuality differential; second, the difference in the chemical characteristics that go to make up the individual tissue or organ—the organ or tissue differential, and third, the difference in metabolic rate of different tissues and the variable rate at which they produce metabolic waste products.

The next question that arises is relative to the advantage that cartilage has over other tissues in relation to the degree of tissue reaction.

It has been found, in animal experimentation,[12] that autotransplantation of unpreserved cartilage is carried out with success to the extent that the cartilage may be said to have returned to a normal state; this statement cannot be made for such tissues as fat, thyroid and muscle. In homotransplants of unpreserved cartilage, there forms as a rule a thick layer of fibrous tissue, but the cartilage itself remains largely intact although isolated parts of it may become necrotic because of trauma. Certain parts of the cartilage are less resistant, especially the large cells that immediately adjoin bone; these usually perish after homotransplantation, while they may be preserved after autotransplantation. In the heterotransplants of unpreserved cartilage, the necrosis is more extensive, resulting in the complete disappearance of the graft in a few weeks.

After the homotransplantation of cartilage, the rise in the polymorphonuclear leukocyte count is lacking entirely, or almost so. The amount of homotoxins given off is apparently insufficient to reach the threshold necessary to cause a rise, whereas other tissues do cause a considerable increase in these cells.

Homoreactions seem to appear only around living and therefore metabolizing transplanted tissue, whereas the heteroreactions appear even around dead or nonmetabolizing tissue. Siebert[13] found that homotransplants, killed before transplantation by mild degrees of heat, no longer elicit a homoreaction, while heterotransplanted tissue, under the same condition, still calls forth a definite heteroreaction on the part of the tissue of the host.

Of cartilage specifically it may be stated that it gives off less homotoxic substances than practically any other tissue, but it too may be destroyed eventually by the invasion of the host's connective tissue—a sign that even cartilage has some form of action injurious to the host. It is this relative failure to produce homotoxic substances that makes cartilage more

Fig. 4.—Preserved cartilage was used to obtain a satisfactory result. In this case, a secondary operation was done to shorten the columellar cartilage through an incision in the mucobuccal fold. At no time was there any evidence of a reaction.

desirable than other tissues for transplanting. This is probably dependent, in part, on the low metabolic rate of cartilage and consequently a failure to produce

11. Siebert, W. J.: Auto and Homeotransplantation of Thyroid Gland into Brain of Guinea Pig, Proc. Soc. Exper. Biol. & Med. **26**: 236, 1928.
12. Loeb, Leo: Autotransplantation and Homeotransplantation of Cartilage in the Guinea Pig, Am. J. Path. **2**: 111, 1926.
13. Siebert, W. J.: Effect of Graded Degrees of Heat on Cartilage on Homeotransplantation and Heterotransplantation in Guinea Pigs, Proc. Soc. Exper. Biol. & Med. **26**: 238, 1928.

homotoxins plus similarity of tissue differential which may be expressed as lack of differentiation of the tissue itself.

HISTOLOGY

How may cartilage best be used? This may be answered in part by the works on the histology of

Fig. 5.—One of the greatest advantages of preserved cartilage is in the application to surgical intervention on children. Many children suffer injuries that are disfiguring. These should be corrected at an early age to counteract the development of an inferiority complex due to ridicule from thoughtless playments and relatives. Their own ribs are not well formed as yet and they readily curl and absorb if used. As a result, most of these children have been compelled to await maturity for the necessary correction. This boy is a typical example.

human beings. Peer, who has done the most complete work in this field, has found that "pickled" cartilage (preserved in 50 per cent alcohol) remains, after transplantation, as tolerated dead foreign bodies (homografts), for about nine and one-half months.[14] From this time on, the surrounding tissues of the host invade the foreign cartilage and slowly absorb portions of it. This process, however, is gradual, and the bulk of the graft is still present two years after transplantation. The specimens examined by Peer at fourteen months and at two years after transplantation showed areas of calcification or early formation of bone.

In contradistinction, autogenous cartilage from the ribs survives after transplantation as living cartilage up to periods as long as six years, neither increasing nor decreasing in size. Peer further stated that he could not advocate or discourage the clinical use of grafts of preserved cartilage on the basis of his experiments. If absorption of the cartilage and replacement by fibrous tissue and bone maintains the contour of the grafts, then this may constitute a desirable filling substance even though the original cartilage itself is lost.

14. Peer, L. A.: Cartilage Transplanted Beneath the Skin of the Chest in Man, Arch. Otolaryng. **27:** 42 (Jan.) 1938; The Fate of Living and Dead Cartilage Transplanted in Humans, Surg., Gynec. & Obst. **68:** 603, 1939.

Autografts are frequently accepted by the host in such a favorable manner that the graft continues to live as viable cartilage, but this type of graft is subject to capricious actions on the part of the host, and it may elicit a reaction of such severity that it too will eventually be lost. As has been repeatedly pointed out by others employing cartilage, it does have disadvantages when used as an autograft. Obtaining the cartilage itself may require an operation much more conducive to complications than is warranted by the reconstruction contemplated.

TABLE 1.—*Types of Operation*

Reconstruction of	No. of Cases
Dorsum of nose	63
Dorsum of nose and columella	18
Depressed malar region	1
Ala nasi	5
Orbital ridge	1
Receding chin	4
Saddle of lower third of dorsum of nose following submucous resection	6
Columella only	5
Depressed frontal region	1
Ear	1

Autografts in our hands have shown a tendency to curl both in the horizontal and in the perpendicular dimension. This is particularly true if the cartilage is from a portion of the rib normally containing a greater portion of fibrous tissue.

Grafts of unpreserved homocartilage may survive transplantation as live grafts, being surrounded by a

Fig. 6.—This boy, aged 13, was sensitive about his saddle nose. The deformity was corrected by the use of preserved cartilage. It is felt that all such deformities in children should be corrected to allow a more normal development of their personalities.

fibrous capsule developed on the part of the host, and a delicate balance may thus be set up whereby the graft may live, relying for nourishment on the diffusion of food products from the host. Once unfavorable factors

are introduced to upset this balance, the previously living cartilage dies and is absorbed and replaced by connective tissue.

Homografts, whether used as fresh or as preserved material, have about equal advantages as far as the question of immediate result at the site of implantation

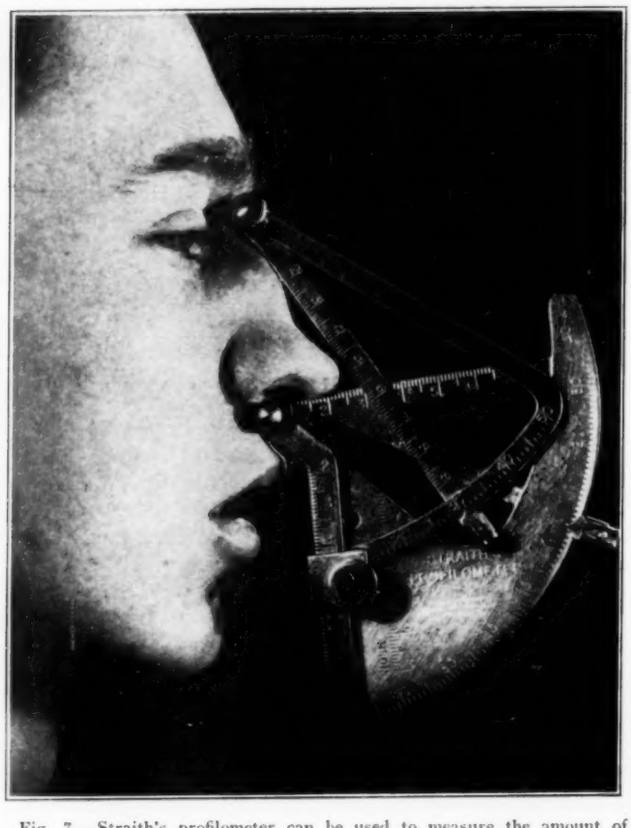

Fig. 7.—Straith's profilometer can be used to measure the amount of depression in a saddle nose and indicate the shape and size of the transplant needed. It is also of great value as an aid in reducing hump noses to the proper profile angle. It makes the reconstruction of nasal deformities more uniform.

in the new host is concerned. Live homografts are transplanted with the knowledge that they will probably become at least partially necrotic and eventually be invaded by connective tissue, even though it may be more or less viable. They may live as parasites by the products of diffusion inside a fibrous capsule developed by the host, remaining only until this equilibrium is disturbed. The preserved cartilage can be placed without the necessity of an operation to obtain the cartilage, and it is known that the cartilage will not be viable but will act as a tolerated foreign body, and, because there is no active metabolism, it will not initiate such active tissue response on the part of the host.

PRACTICABILITY OF PRESERVED HEMOCARTILAGE

Preserved homocartilage seems to be the type of choice of the homografts. Large quantities may be obtained at autopsy, sterilized and stored to be used as needed. This eliminates a major operation on the new host. Furthermore, from actual experiences, it seems that cartilage of this type resists infection better than any other material.

The use of homografts without means of preservation —that is, the use of fresh homografts—has so many unpractical aspects that it hardly needs to be mentioned. To obtain a donor who will supply cartilage at the proper time is in itself a major problem. For a person to lose the amount of cartilage necessary in some of the more massive reconstructions presents a major problem to the donor. This can be true in autografts as well as in homografts. Some of the reconstructions require five or six large pieces of cartilage, and this might leave the donor embarrassed.

From the foregoing information the following statements may be formed: 1. Heterografts need not be considered in any form. 2. Autografts present many problems that make them unpractical if the results can be otherwise favorably compared to the remaining type of graft—namely, the homograft. 3. The unpreserved homograft is also not practical, as has been pointed out. This leaves the consideration of the preserved homograft.

TABLE 2.—*Complications in Nineteen Cases*

	No. of Cases
Curving, bending or migration of the graft	7
Postoperative hematomas requiring drainage	5
Cartilage entirely lost after gross infection	3
Cartilage partially lost after gross infection	2
Cartilage entirely lost without evidence of infection	1
Cartilage retained entirely with gross infection of three weeks	1

TECHNIC

The percentage of success that may be anticipated with the use of homografts is determined from information gained by us in the review of 100 consecutive cases. In this group of cases, the period of observation extends from one and one-half to four years. The more recent cases are not included because it has been found that changes such as migration, curling and gross absorption can occur at a late date, and it was felt that such cases would not present a true picture of the results that might be anticipated.

Fig. 8.—After insertion of the properly contoured cartilage, the nose now is seen to assume a more normal angle.

All other types of cartilage, such as auricular and septal, have been discarded in favor of costal cartilage.

It is obtained during autopsy in cases in which the cause of death is known and in which the deceased person's blood is serologically normal. Middle-aged persons are preferred, as their cartilage does not present too much fibrous tissue or too much calcification. The cartilage is removed with as aseptic a technic as possible and placed in "merthiosaline" (a solution of 1 part aqueous merthiolate [1:1,000] to 4 parts of sterile physiologic solution of sodium chloride) according to the technic of Pierce and O'Connor.[15]

Variations from the technic just given seem to lead to poorer results. The cartilage must be preserved in such a manner that its chemical composition at the time of transplantation approximates the physiologic chemical composition of the new host. Failure to do this results in unmistakable reactions of a severe nature. Too great a concentration of mercurial salts in the cartilage may result in a purely chemical irritation in the new host. An effort to maintain as nearly as possible a physiologic solution and yet maintain sterility is the method of choice.

Biweekly cultures and frequent changes of the "merthiosaline," especially early in the preserving process, are of the utmost importance.

RESULTS IN ONE HUNDRED CASES

The cases about to be reviewed concern the use of grafts of homocartilage in and about the face. As stated before, the period of postoperative observation varies from one and one-half to four years. There will be some duplication in the figures as, in some cases, more than one type of operation was carried out on a single person.

The total number of consecutive cases reviewed is 100. Of this group, there were 81 in which there was an uneventful postoperative recovery and in which no subsequent operations or treatments were required after a period of ten days. In the remaining 19 cases, everything from local redness without a rise in temperature to frank infections with systemic reactions is included as complications. The types of operations are classified in table 1.

The complications in 19 cases in which there was some type of complication are subdivided in table 2.

From the evidence presented it is seen that 81 per cent of the patients suffered no complications. Of the remaining 19 per cent who did present complications, all retained their cartilages and eventually made a satisfactory recovery with the exception of 4 patients in whom the cartilage was lost entirely and 2 in whom the cartilage was lost in part. The 2 patients who had a partial loss of the cartilage were not reoperated on because they were satisfied with the cosmetic result. Thus 94 per cent of the grafts were classed as successful.

Seven of the patients were reoperated on to remove or trim cartilage when curving or migration had taken place. Three were reoperated on to add more cartilage to the original amount, purely for cosmetic reasons.

Of the 4 patients who lost their cartilage entirely, 2 were operated on again, preserved cartilage homografts being used, with complete success. One of the patients had had a previous operation elsewhere in which an autograft cartilage had been used and lost. This was replaced with a preserved homograft with satisfactory results.

Several patients in whom complications developed had thick, red skin containing enlarged pores filled with secretions. These persons generally carry an unfavorable prognosis probably because, in elevating the skin, the most dependent portion of the glands (sweat and sebaceous) is cut off, allowing gross contamination of the undermined tissues.

In several cases hematomas developed after the patients had removed the splints which had been placed on the nose to maintain pressure. Premature removal of splints, together with periods of "sneezing," seemed to be the most important etiologic factor in the production of hematomas. These complications were seen most frequently in male patients.

CONCLUSIONS

In view of the biologic rationale as brought out in the opening sections of this text and the encouraging results obtained in actual practice of the technic as reviewed, it seems quite logical to accept the use of homocartilage preserved in "merthiosaline" as the basis on which to restore facial contour. Homocartilage has the great advantage of eliminating the somewhat hazardous operation of costal resection with its prolonged incapacity and morbidity.

As shown by a review of 100 consecutive cases in which homocartilage grafts were employed, 81 per cent were without complications while 94 per cent of the operations resulted in eventual success by the use of the described technic. Better results can hardly be expected with autogenous grafts, and certainly the use of no other foreign substance can compare with it.

1713 David Whitney Building.

15. Pierce, G. W., and O'Connor, G. B.: Reconstruction Surgery of the Nose, Ann. Otol., Rhin. & Laryng. **47**: 437, 1938; Refrigerated Cartilage Isografts.[2]

Clinical Notes, Suggestions and New Instruments

PULMONARY LESIONS IN HODGKIN'S DISEASE

ROBERT CHARR, M.D., PHILADELPHIA, AND
ALFRED WASCOLONIS, M.D., WHITE HAVEN, PA.

The case of Hodgkin's disease which we present was interesting in that hemoptysis was one of the symptoms and in that the disease was almost entirely limited to the right lung.

REPORT OF CASE

History.—A white woman aged 23 was admitted to the White Haven Sanatorium in March 1940. She complained of pain in the right side of the chest, dyspnea, cough, expectoration and hemoptysis. The illness began in July 1939 with pain in the right side of the chest. Soon dyspnea began. Cough and expectoration with occasional hemoptysis followed.

Physical Examination.—Nutrition and color were poor. The cervical lymph nodes were palpable on both sides. The chest showed signs of effusion on the right side with displacement of the heart toward the left. The abdomen showed no masses or ascites. The blood pressure was 108 systolic and 70 diastolic. The temperature was 99 to 102 F., the pulse rate 100 to 130 and the respiratory rate 20 to 30. The weight was 81 pounds (36.7 Kg.).

Laboratory Observations.—The urine showed albumin and the blood secondary anemia with leukocytosis (22,800 cells, 90 per cent of which were polymorphonuclear leukocytes). Examination of the sputum was repeatedly negative for tubercle bacilli. The pleural fluid was yellowish and slightly turbid, and the smear and culture of it were negative for tubercle bacilli. The sedimentation rate was increased 31 mm. at the end of an hour. A cervical lymph node taken for biopsy showed a typical appearance of Hodgkin's disease, such as marked

From the Pathological Laboratory of the White Haven Sanatorium, White Haven, Pa., and the Department for Diseases of the Chest, Jefferson Hospital, Philadelphia.

increase of connective tissue, destruction of the normal architecture of the node and occasional eosinophils, but Reed cells were not found.

Roentgen Diagnosis.—The right side of the chest presented an evenly dense shadow. The left side was clear. The heart was displaced toward the left (fig. 1). Pleural effusion of unknown etiology was diagnosed.

Fig. 1.—The dense shadow in the lower two thirds of the right side of the chest suggested an effusion. The left lung appeared essentially normal. The heart was displaced toward the left side. (Courtesy of Drs. John T. Farrell Jr. and E. Robert Wiese.)

Clinical Course.—After admission the patient gradually became weaker and died within a few days.

Necropsy. — The middle lobe and the anterior half of the lower lobe of the right lung were replaced by firm yellowish masses (fig. 2). The trachea, esophagus and the mediastinal blood vessels were encircled by similar masses. The upper lobe of the right lung showed subpleural nodules. The hilar lymph nodes were large masses of yellowish firm tissues. The right pleural cavity contained 0.5 liter of turbid yellowish fluid. On section the masses in the lung and hilar regions were yellowish and firm, having considerable infiltration of fibrous tissue. The central portions of the nodules were necrotic, forming cavities. In the posterior portion of the lower lobe were small nodules. The bronchial mucosa appeared thickened. The left lung was normal.

The pericardial sac contained about a liter of turbid yellowish fluid. The heart was small and the myocardium flabby. The valves were normal. The gastrointestinal tract appeared normal. The spleen was of normal size. No nodules were found. The liver was larger than the average, but no nodules were seen. The kidneys were normal. The mesenteric lymph nodes were not unusual.

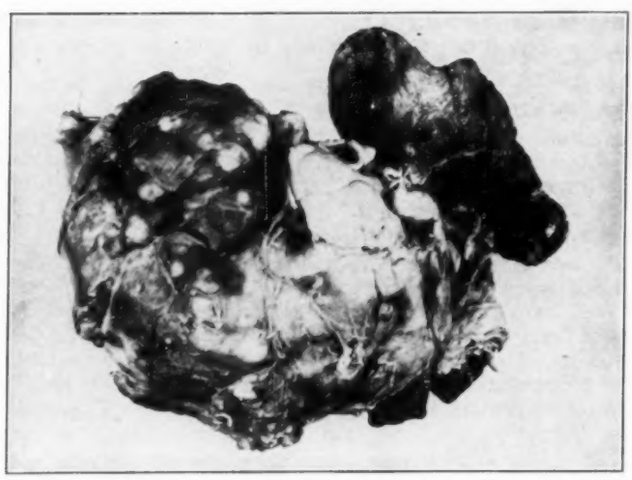

Fig. 2.—The middle lobe and the anterior half of the lower lobe of the right lung were extensively involved. The upper lobe of the right lung showed scattered nodules. The hilus lymph nodes, particularly on the right side, were greatly enlarged. The left lung was normal.

Microscopic Appearance.—The sections taken from the right lung showed marked pleomorphism. The normal architecture of the pulmonary tissue was destroyed by infiltration of lymphocytes, plasma cells and polymorphonuclear leukocytes. Several large mononuclear and multinuclear giant cells were found. These cells were undoubtedly Dorothy Reed cells. Throughout all sections there was dense infiltration of fibrous tissue forming a heavy reticulum. Scattered throughout the sections were areas of necrosis. The hilar lymph nodes presented similar changes.

COMMENT

Hemoptysis is so rare in Hodgkin's disease that it is not discussed in the symptomatology of the disease in textbooks of medicine. Hemoptysis, together with cough and expectoration, was present in 1 of the cases reported by Moolten.[1] Postmortem examination of this patient showed a massive polypoid growth occluding the right main bronchus. The spitting of blood in this case was apparently due to erosion of the polyp.

In our case, although there was no bronchial growth, there was considerable thickening of the bronchial mucosa suggesting granulomatous infiltration of the mucosa. Apparently spitting of blood was the result of an erosion of the diseased mucosa. The exact site of hemorrhage was not discovered.

The close similarity of the general symptomatology of Hodgkin's disease to that of pulmonary tuberculosis has long been recognized. In this case the presence of hemoptysis in addition to the pleural effusion, cough and expectoration brought about some difficulty in establishing a differential diagnosis.

Pulmonary involvement in Hodgkin's disease occurs in 40 (Verse[2]) to 60 (Moolten[1]) per cent of cases. Kraus[3] expressed the belief that the pulmonary involvement is part of the general manifestation of the disease. However, there are reports of cases[2] in which the clinicopathologic studies indicated that the disease probably started in the lung itself. Our case appears to be one of these.

SUMMARY

In a case of Hodgkin's disease of the lung, hemoptysis was a symptom. Although the anatomic involvement was extensive, it was almost entirely limited to the right lung.

236 Pine Street.

RECURRENT TETANUS SUCCESSFULLY TREATED WITH AZOSULFAMIDE

FREDERICK LEMERE, M.D., AND J. S. ARNASON, M.D.
SEATTLE

The following case is presented because of its significance to wartime medicine. Tetanus is comparatively rare in civil life, and there has been little opportunity to observe the effect of the new sulfonamide preparations in this disease. In the case here reported 110,000 units of tetanus antitoxin was given for the original attack, with recurrence eighteen days later. The second attack was successfully treated with azosulfamide.

REPORT OF CASE

History.—A youth aged 19, a mill worker, seen with Dr. E. M. Chew in consultation, was admitted to the Ballard General Hospital July 29, 1940 with headache, nausea, vomiting, numbness of the hands and chin, abdominal pain, inability to void, mild delirium and tetanic convulsions. The mode of infection was uncertain. A week before he had chafed his thighs while riding a horse and two or three weeks before had bruised a toe and injured a finger while working.

The temperature was normal on admission but rose to 103 F. on the second day and dropped to normal again after the fourth day. Laboratory data were negative, including those on the level of calcium in the blood, the spinal fluid and neutralization tests for encephalomyelitis virus, except that the white cell count was 13,200.

Progress.—A diagnosis of tetanus was made and the convulsions were controlled with sedatives. During the first four days of hospitalization a total of 20,000 units of tetanus antitoxin was given intraspinally, 70,000 units intravenously and 20,000 units intramuscularly. The convulsions stopped on the fourth day and the patient was discharged as having recovered on the thirteenth day.

1. Moolten, S. E.: Hodgkin's Disease of Lung, Am. J. Cancer **11**: 253-294 (June) 1934.
2. Verse, M., in Henke, F., and Lubarsch, Otto: Handbuch der speziellen pathologischen Anatomie und Histologie, Berlin, Julius Springer, 1931, vol. 3, pt. 3, p. 280.
3. Kraus, F., cited by Verse.[2]

He went back to work, but on August 20 (eighteen days after his last convulsion and treatment with serum) he had a recurrence of the original symptoms, including convulsions. He was readmitted with a temperature of 100 F., which returned to normal the next day. He was given azosulfamide and sedatives and recovered in four days and has been well since. No antitoxin was used in treating the relapse.

COMMENT

Antitoxin has neither a bactericidal nor a bacteriostatic action on the tetanus organisms in the focus of infection. Its action is limited to neutralization of unattached toxin, and only as long as it is present in the circulating fluids in sufficient concentration will it protect the nervous tissues from further damage. The antitoxin must be kept at sufficient concentration as long as toxin is forming at the focus of infection.

Apparently in this case the focus of infection remained active and produced a recurrence of symptoms eighteen days after the last dose of antitoxin. Azosulfamide eliminated this focus and produced recovery without further use of tetanus antitoxin.

SUMMARY

In the case of tetanus presented the symptoms were temporarily controlled by 110,000 units of tetanus antitoxin. Eighteen days later, however, the symptoms recurred. The recurrence was successfully treated with azosulfamide.

706 Medical and Dental Building—2208 Market Street.

DEATH FROM TRANSFUSION OF PLASMA

FRANK MAYNER, M.D., WYANDOTTE, MICH.

Reports of deaths due entirely to transfusion of whole blood are fairly rare. Reports of deaths due entirely to transfusion of plasma are still more rare. I have been unable to find any report of a fatality due to plasma transfusion in the English literature between the years 1927 and 1940. The lack of such reports may be explained by the only too recent enthusiasm over and use of transfusions of plasma.

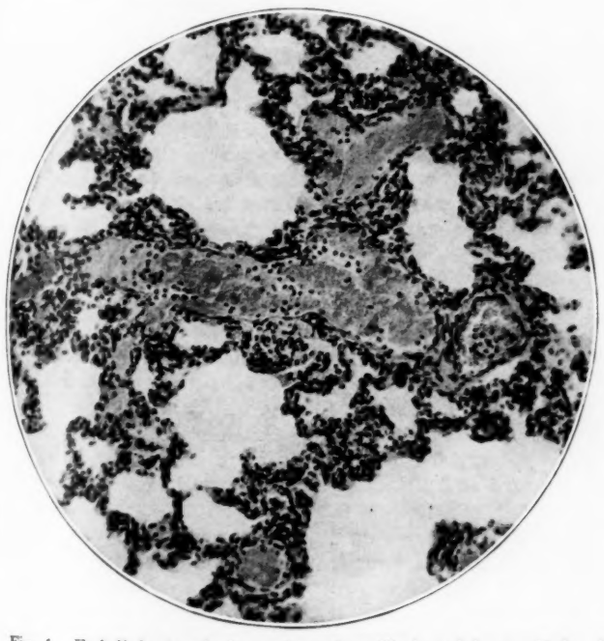

Fig. 1.—Emboli in terminal vessels and capillaries of lung. Reduced from a photomicrograph with a magnification of 100 diameters.

REPORT OF CASE

A boy aged 4 years entered the hospital on July 31, 1940 because of severe edema. He had been perfectly well until one week before entry, when he acquired a cold the only manifestation of which was a running nose. He did not have a cough, sore throat, rash, articular pains, dyspnea or pains in the chest. Four days before entry he had edema of the ankles which gradually became generalized. One day before entry it was noticed that the urinary output had diminished. Chickenpox was the only other infectious disease that the patient had had. One brother had died with similar symptoms.

The child assumed the orthopneic position at all times. The blood pressure was usually 120 systolic and 80 diastolic.

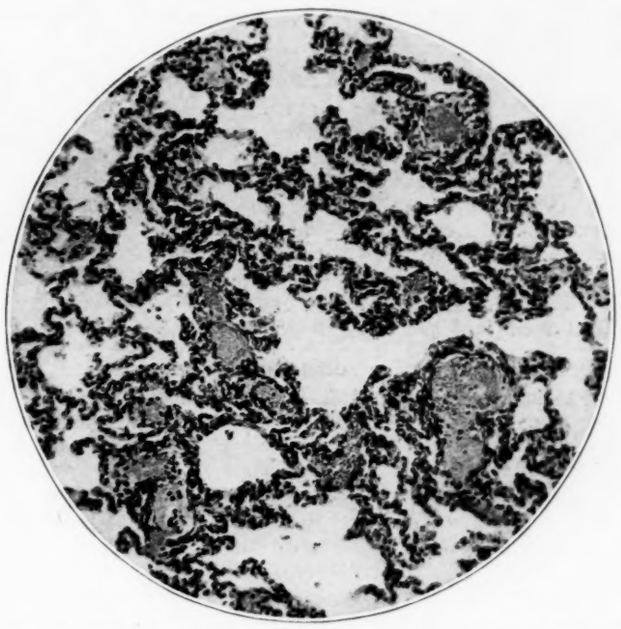

Fig. 2.—Emboli in terminal vessels and capillaries of lung. Reduced from a photomicrograph with a magnification of 100 diameters.

Ophthalmoscopic examination gave essentially negative results. Laboratory examination of the urine revealed a large amount of albumin, 2 to 5 white blood cells, 1 to 5 red blood cells and 3 to 6 hyaline, waxy and finely granular casts per high power field. The blood showed 4,520,000 red blood cells per cubic millimeter, 9,100 white blood cells per cubic millimeter, 92 per cent hemoglobin, 51 per cent filamented neutrophils, 7 per cent nonfilamented neutrophils, 40 per cent lymphocytes, 1 per cent eosinophils and 1 per cent basophils. The nonprotein nitrogen level was 26 mg. per hundred cubic centimeters; the total plasma protein was 5.6 Gm. per hundred cubic centimeters, the total plasma albumin was 5.04 Gm. and the total plasma globulin was 0.5 Gm. per hundred cubic centimeters.

Many forms of treatment were instituted. These consisted of dextrose given intravenously; a pneumonia jacket; magnesium sulfate, ammonium chloride and sodium bicarbonate given orally; salyrgan given rectally; a high protein diet, and potassium chloride substituted for sodium chloride in the diet. It was likewise thought advisable to give the patient a transfusion of whole blood. The blood of the patient and the father belonged to Landsteiner class A and cross matched without agglutination. Two hundred and fifty cc. of citrated whole blood was given without any untoward effect. The patient was discharged from the hospital two months after entry with improvement of his edema and urine free from albumin.

After being home for fifty-six days, the patient reentered the hospital because of an infection of the upper part of the respiratory tract which evidently aggravated his edema. This infection promptly subsided. The urine again contained a large amount of albumin and casts. The total plasma protein was 3.16 Gm., the total plasma albumin was 1.82 Gm., the total plasma globulin was 1.34 Gm. and the nonprotein nitrogen was 26.3 mg. per hundred cubic centimeters. The patient was usually sitting up in bed and playing with his toys. The treatment consisted of limiting fluids, restricting salt intake, applying heat to the renal region and giving ammonium chloride orally. It was also thought advisable to give the patient a transfusion of plasma so as to increase his plasma proteins. One hundred and ten cc. of plasma was prepared as follows: The blood of the same donor (the boy's father) was used without cross matching. Fifty cc. of 2.5 per cent sodium citrate in isotonic saline

solution was mixed with 450 cc. of blood and placed in a sterile flask. Two days later the plasma was suctioned off with a sterile needle and syringe and placed in a sterile flask. Six hours later the plasma was administered undiluted without being filtered at a rate of approximately 5 cc. a minute.

After twenty to twenty-five minutes, with about 90 to 100 cc. of plasma having been administered, the patient suddenly became cyanotic and dyspneic, gasped for breath and died despite the administration of stimulants.

AUTOPSY

The gross changes noted at autopsy were as follows: Generalized edema, ascites (500 cc. of clear, colorless fluid) and dilatation of the right side of the heart. The blood squirted up a distance of 7 inches (18 cm.) when the pulmonary artery was cut. There were petechial hemorrhages of the visceral pleura and the epicardium. The kidneys grossly were within normal limits.

Microscopic examination showed multiple emboli of fibrin in the terminal pulmonary vessels and capillaries, as seen in the illustrations, and subacute glomerular nephritis.

COMMENT

The immediate cause of death of this patient was anoxemia due to multiple emboli of fibrin in the capillary system of the lungs. There are only two possible explanations that I can suggest for the resulting condition. The first is improperly prepared and administered plasma. In this case the plasma was evidently prepared satisfactorily, but the failure to use a filter at any time during the procedure cannot be overlooked. This can most certainly explain the presence of fibrin in the lesser circulation. The second consists of using the same donor twice after an interval of only a month or so. This interesting fact was brought out by Plummer [1] and Gutteridge,[2] who gave whole blood from the same donor to the same patient after a month's rest with similar immediate fatal results. In this case, the interval between the two transfusions was about two and one-half months.

In most of the cases in which death was due to transfusion autopsy has shown hemolysis, hemochromatosis of the kidneys, nephrosis and uremia. I have been unable to find a report of a similar case in the literature.

Wyandotte General Hospital.

SUCCESSFUL SUBLINGUAL THERAPY IN ADDISON'S DISEASE

A CONFIRMATIVE REPORT

DAVID TURNOFF, M.D., AND LEONARD G. ROWNTREE, M.D.
PHILADELPHIA

The recent report of Haymaker and his associates concerning the successful sublingual treatment of Addison's disease with desoxycorticosterone acetate in propylene glycol finds confirmation in our experience in 2 advanced cases of this disease. The patients were given 1 mg. (6 drops) under the tongue six to seven times daily; this preparation was retained for fifteen minutes and then expectorated. Salt was utilized also in the early part of the study but because of edema was discontinued. The good effects observed, we believe therefore, were due entirely to desoxycorticosterone acetate.

REPORT OF CASES [1]

CASE 1.—A. S., a white woman aged 43, ailing since 1935, admitted to the Philadelphia General Hospital on Sept. 20, 1940 complained of anorexia, weakness and a loss of 45 pounds (20.4 Kg.). The pigmentation of the skin and buccal mucous membrane was characteristic. Her blood pressure was 94 systolic and 72 diastolic. A test for the excretion of chloride yielded positive results, and in addition the patient did poorly on a salt-poor diet. She was given Swingle's extract of the adrenal cortex, became stronger and improved clinically in every respect. Intramuscular treatment with desoxycorticosterone acetate, 5 mg. daily given in sesame oil, was also successful. She was then given the old Muirhead regimen: epinephrine to the point of tolerance, by all available routes for ten days. On this regimen she lost weight—from 106¾ to 101½ pounds (48.4 to 46 Kg.)—and became distinctly weaker, and her blood pressure dropped from 102 systolic and 60 diastolic to 90 systolic and 60 diastolic. At this time the sublingual administration of desoxycorticosterone acetate was begun, 6 drops under her tongue being given six times a day, at intervals of three hours. In the beginning she was given in addition 5 Gm. of sodium chloride daily, but later, because of edema, no extra salt was employed. On this regimen she gained weight, her appetite increased and her blood pressure rose. The good effects were repeated after an interlude of two weeks of receiving desoxycorticosterone acetate intramuscularly. At the present time she has been adequately maintained for more than a month with the oral preparation. During the latter period of trial she has been taking 5 drops seven times a day. Her blood pressure is maintained at a satisfactory level, she has gained weight and strength and she feels quite well. Rehabilitation is satisfactory.

CASE 2.—M. H., a white woman aged 44, slightly built, was first admitted to the hospital in February 1939 complaining of nausea after eating. She was nervous and dyspneic on exertion. Her blood pressure was 110 systolic and 75 diastolic, and she exhibited some tenderness over the abdomen, in the costovertebral angles and along the long bones and the peripheral nerves. She was discharged with a diagnosis of neurasthenia.

She was readmitted in May 1940 complaining of weakness, fatigue, anorexia, vomiting, vertigo, dyspnea on exertion, swelling of the ankle, loss of weight and abnormal pigmentation of the skin and of the lingual and buccal mucous membrane. Her blood pressure was 82 systolic and 50 diastolic. On a regimen of a diet low in potassium and high in sodium and of adrenal cortex extract she improved immediately and was discharged in June 1940 with a diagnosis of Addison's disease.

On a similar regimen, as an outpatient, she continued to feel well. When, however, her dose of adrenal cortex extract was reduced she began to become ill and her blood pressure to drop. She was therefore readmitted to the hospital on November 8, at which time her blood pressure was 76 systolic and 54 diastolic, but otherwise her physical examination revealed no new changes. Various preparations were used, as in case 1, in an effort to observe the comparative effectiveness of different regimens. She did badly with the Muirhead regimen and satisfactorily with sublingual therapy. She was finally discharged (Jan. 8, 1941) from the hospital, taking a house diet, without extra salt, and desoxycorticosterone acetate by mouth in doses of 5 drops seven times a day. She has been taught to keep the material under her tongue and then to spit it out after fifteen minutes. After one month of following this plan she feels fine, her appetite is one month of following this plan the patient feels fine, her appetite is good and she is no longer lacking in vitality; objectively her weight has been maintained and her blood pressure has increased.

In this report we do not wish to compare the efficacy of the various materials used but rather to call attention to the success attending sublingual therapy and thereby to encourage further clinical trial.

In using the oral route, we have had the same experience recorded by other workers for the intramuscular use of this preparation, viz. the development of edema in both patients when additional sodium chloride was employed. When no extra sodium chloride was given, edema did not appear.

Thirty-Fourth and Pine streets.

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1. Plummer, N. S.: Six Fatalities from Transfusion, Brit. M. J. **2**: 1186-1189 (Dec. 12) 1936.

2. Gutteridge, N. M.: Recent Advances in the Pathology of Transfusion, M. J. Australia **1**: 585-589 (April 27) 1940.

From the Philadelphia Institute for Medical Research and the Philadelphia General Hospital.

Ciba Pharmaceutical Products, Inc., provided the medication employed, and the American Philosophical Society gave financial aid from the Daland Fund.

1. These patients were treated in the services of Drs. T. G. Schnabel and D. W. Kramer, respectively, of the Division of Medicine, Philadelphia General Hospital.

PEMPHIGUS VULGARIS: FAILURE OF TREATMENT WITH RIBOFLAVIN AND SMALLPOX VACCINE

STEWART WOLF, M.D., AND GEORGE M. LEWIS, M.D., NEW YORK

An encouraging report of the treatment of pemphigus vulgaris was recently made by Topping and Knoefel.[1] They administered to their patient orally a flavin concentrate containing 970 Sherman-Bourquin units, or approximately 2.5 mg. of riboflavin daily. This patient had previously been treated by them with neoarsphenamine and sulfanilamide without success. After the administration of riboflavin had been started, however, the lesions cleared up and the patient remained well for several weeks. Later, after treatment was discontinued, the patient suffered a recurrence.[2] When the drug was resumed, this time in the dose of 5 mg. daily, the lesions cleared up again, and the patient has been apparently well since, nearly fourteen months after the institution of riboflavin therapy.[2]

On the strength of this favorable report, and since pemphigus is still considered a fatal disease, a patient in the New York Hospital suffering from pemphigus was treated for eleven days with 100 mg. of riboflavin (Merck) by mouth daily, forty times the dose used by Topping and Knoefel. In contradistinction to their patient, who showed improvement at once and suffered no new lesions after the start of treatment, our patient showed no perceptible benefit from the drug and continued to have new lesions. He finally contracted bronchopneumonia and died.

Another therapeutic measure which deserves some comment was tried on our patient. As we were working on the assumption that Grace's [3] demonstration of a virus being etiologically concerned with pemphigus was correct, it seemed rational to try nonspecific vaccine therapy in this case. The therapeutic value of smallpox vaccine in the treatment of recurrent herpes simplex is well known.[4] Accordingly the patient was given five injections of 0.1 cc. of ordinary smallpox vaccine subcutaneously and five injections of 0.1 cc. of Rivers' vaccine [5] intradermally, without noticeable effect.

REPORT OF CASE

History.—An Austrian Jew aged 53, a bookkeeper, living in the United States for only nine months when he was admitted to the New York Hospital, June 14, 1940, complained chiefly of progressive involvement of the skin with bullae for eight months. His past and his family history were not contributory. The present illness began in October 1939. At that time bullae first appeared in small numbers on apparently normal skin of the trunk and extremities. They came in crops, leaving crusted raw areas which healed poorly. Similar lesions appeared in the mouth and throat. They made for a great deal of discomfort in eating and frequently bled a little. Later the left eye and eyelid became involved in a similar process. Meanwhile the lesions over the trunk and extremities were becoming more numerous. The patient had lost 35 pounds (15.9 Kg.) since the onset of the disease.

Examination.—Physical examination on admission showed him to be emaciated, acutely ill and uncomfortable. His whole body was virtually covered with rounded, denuded, crusted and often secondarily infected lesions. There were a few fresh bullae in areas of apparently normal skin. These varied in size from 1 to 6 cm. in diameter. The Nikolsky sign was present. Touching the open lesions caused a great deal of pain, and they bled easily. The nasal mucosa, as well as the buccal cavity and most of the pharynx, showed bullae and desquamation. The lungs were clear, apart from a few scattered rhonchi. The remainder of the physical examination was not remarkable.

Laboratory Data.—The urine showed occasional traces of albumin but no other pathologic conditions. The hemoglobin content of the blood was 13 Gm.; the red blood cells numbered 5.2 million and the white blood cells 8,300 with 25 adult polymorphonuclear cells, 45 immature cells, 18 lymphocytes, 3 monocytes and 9 eosinophils. During the patient's stay in the hospital the proportion of red blood cells and hemoglobin fell slightly while the white blood cell count rose, showing an increase in the proportion of immature polymorphonuclear cells. A count six days before death revealed the hemoglobin content to be 10.5 Gm., the red blood cells 4.6 million and the white blood cells 19,700; the differential count showed 30 adult polymorphonuclear cells, 52 immature cells, 12 lymphocytes, 2 monocytes, 3 eosinophils and 1 basophil. The blood Kline reaction was negative; the blood urea nitrogen level was 11 mg. per hundred cubic centimeters and the fasting level of blood sugar was 103 mg. per hundred cubic centimeters on admission.

Course.—The course in the hospital was progressively downhill. New crops of bullae continued to appear. Apart from the administration of riboflavin and smallpox vaccine, as mentioned previously, the patient was given a tub bath every day in tepid water containing 1 Gm. of potassium permanganate. His entire body was sprayed twice a day with a 1 per cent aqueous solution of gentian violet and his mouth cleaned with staogen oil.[5a] Bronchopneumonia developed and sulfapyridine (0.1 Gm. every four hours) was without apparent effect. On the thirtieth day after admission his temperature went above 38 C. (100.4 F.) and remained elevated, rising as high as 41 C. (105.8 F.) on the day of his death one week later.

Autopsy.—An autopsy was performed, and a minute study was made of the organs, including the brain and spinal cord. The anatomic diagnoses were pemphigus with excoriation of a large proportion of the cutaneous surface, an acute splenic tumor with focal areas of necrosis, fatty degeneration of the liver and of the heart, bronchopneumonia with consolidation throughout the lower lobes of the left lung, acute bronchitis and hydrothorax.

Other abnormalities noted were slight arteriosclerosis of the aorta and the right coronary and pulmonary arteries, slight calcification of the renal tubules, cholelithiasis, a calcified nodule in the lower lobe of the right lung, thrombosis of the inferior hemorrhoidal veins in the lower portion of the rectum and of the pancreatic veins, focal necrosis of the pancreas with lymphocytic infiltration, a cyst of the pars anterior of the hypophysis and edentia.

It is interesting that pathologic changes in the central nervous system described by other observers [6] were not present in our patient. Lesions have been found in the spinal cord, especially about the dorsal root, which have led several observers to regard pemphigus as primarily a disease of the central nervous system showing, like herpes zoster, cutaneous bullae as the most obvious external sign. Dr. Louis D. Stevenson examined carefully the brain and spinal cord of this patient, and he was able to find no significant lesions in either.

Furthermore, lesions in the adrenal glands,[7] described as having a probable etiologic connection with pemphigus vulgaris, were not seen in this case.[8]

COMMENT

This case is reported because it illustrates the failure of a therapeutic measure in pemphigus which has been recommended as efficacious. In addition, a new method of therapy was undertaken, namely vaccination, which was based on the assumption that pemphigus is a virus-borne disease. This measure

From the New York Hospital and the Department of Medicine (Dermatology), Cornell University Medical College.

1. Topping, M. C., and Knoefel, A. F.: Use of Vitamin G in Pemphigus: Report of a Case of Pemphigus Vulgaris Treated Successfully with Riboflavin, J. A. M. A. **114:** 2102 (May 25) 1940.

2. Topping, M. C.: Personal communication to the authors.

3. Grace, A. W., and Suskind, F. H.: Etiology of Pemphigus Vulgaris: Isolation of a Transmissible Agent in a Fourth Case, J. Invest. Dermat. **2:** 1 (Feb.) 1939.

4. Foster, P. D., and Abshier, A. B.: Smallpox Vaccine in the Treatment of Herpes Simplex, Arch. Dermat. & Syph. **36:** 294 (Aug.) 1937.

5. Rivers, T. M., and Ward, S. M.: Jennerian Prophylaxis by Means of Intradermal Injections of Culture Vaccine Virus, J. Exper. Med. **62:** 549 (Oct.) 1935.

5a. A proprietary preparation said to be "an ozonide of olive oil in olive oil."

6. Poirrier, L.: Pathogénie nerveuse des pemphigus chroniques, Thesis, Paris, no. 169, 1904. Covey, G. W.: Pemphigus Vulgaris, with Findings in the Spinal Cord Suggesting the Etiology of the Skin Lesions, Arch. Dermat. & Syph. **9:** 305 (March) 1924.

7. Talbott, J. H., and Coombs, F. S.: Pemphigus: Experimental Studies on Thirty-Four Patients, Arch. Dermat. & Syph. **41:** 359 (Feb.) 1940.

8. Since this paper was submitted for publication, a patient with acute pemphigus has been treated in this hospital with riboflavin without salutary effect from the drug. She was a 58 year old Irish woman, sick for only six weeks before admission. The rash had been present only two days. On admission her skin and mucous membranes were covered with characteristic bullae. She died in four days despite the administration of 50 mg. of riboflavin twice a day for three days. The diagnosis was confirmed by postmortem examination. The case will be reported in detail later.

also met with failure. Pathologic studies in this case failed to reveal the presence of lesions in the central nervous system or in the adrenal glands, sites considered by other investigators to have special significance in pemphigus.

SUMMARY

In the case of pemphigus here reported treatment with riboflavin and smallpox vaccine was tried. The patient died while under treatment. An autopsy failed to reveal lesions in the spinal cord or in the adrenal glands, sites described as characteristic by other investigators.

525 East Sixty-Eighth Street—121 East Sixtieth Street.

Council on Physical Therapy

THE COUNCIL ON PHYSICAL THERAPY HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. HOWARD A. CARTER, Secretary.

RADIO-EAR TYPE C, SPECIAL ELECTRONIC HEARING AID ACCEPTABLE

Manufacturer: E. A. Myers and Sons, Inc., 306-308 Beverly Road, Mount Lebanon, Pittsburgh.

The Radio-Ear Type C, Special Electronic Hearing Aid consists of the following parts:

(*a*) Combined microphone and amplifier unit M-5375 with volume control switch and battery "economizer," the latter intended to reduce the current drain on new batteries giving full voltage. The microphone amplifier unit is 3¾ by 1¾ by ⅝ inches, weighing 85 Gm. A special four prong connector which plugs into the microphone increases the over-all length by ¾ inch.

(*b*) A and B batteries in leatherette zipper case. This case is 4¾ by 3¼ by 1¼ inches and with batteries, weighs 358 Gm. The A battery is Radio-Ear 728, 1.5 volts. The B battery is Radio-Ear 729, 34.5 volts. Connections are made by means of a special three prong plug connector.

(*c*) Two crystal receivers, C-5172, 5/16 by 1 inch (diameter) and C-5095, ⅛ by ¾ inch diameter, each with molded earpiece. Bone conduction receiver.

TABLE 1.—*Current Drains at Full Voltage*

Battery	Economizer Position	Voltage	Current
A	Battery used	1.5	100.00 ma.
B	Battery used	34.5	0.65 ma.
A	Battery new	1.5	85.00 ma.
B	Battery new	34.5	0.50 ma.

TABLE 2.—*Over-All Amplifications*

	128	256	512	1,024	2,048	4,096
At normal ear threshold, ½ full volume	nil	nil	20	45	38	19
At approximately 45 decibels above normal threshold	?	24	35	49	40	8

The Council's investigation of the unit revealed that:

Battery Drain.—With new batteries giving full voltage, the current drains are as shown in table 1.

Radio-Ear Type C, Special Electronic Hearing Aid.

Mechanical and Electrical Features.—The instrument is neat in appearance and substantially made. The high degree of amplification makes it extremely sensitive to mechanical shocks, so that the rubbing of the clothing either on the microphone or on the connecting cords results in noise.

Performance tests were made with the "economizer" set in the used battery position.

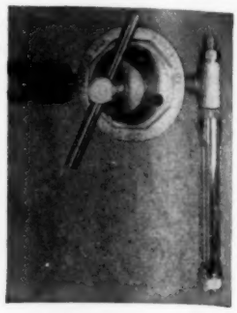
Amplification.—The over-all amplifications with the M-5375 and C-5172 combination were as shown in table 2.

The Council voted to accept the Radio-Ear Type C, Special with C-5172 crystal and bone receiver for inclusion on its list of accepted devices.

AIRCO OXYGEN THERAPY LINE REGULATOR, NO. 806 8681, ACCEPTABLE

Manufacturer: Air Reduction Sales Company, 181 Pacific Avenue, Jersey City, N. J.

The Airco Oxygen Therapy Line Regulator, Number 806 8681, is an oxygen therapy line or "station" pressure regulator for use where a manifold is employed to supply oxygen through a pipe line to several station outlets. The outlet fitting accommodates the standard oxygen therapy flowmeters used on the Council accepted Airco Oxygen Therapy Regulator, Style 8481. Pressure from the oxygen supply is reduced through only a single stage before entering the pipe line.



Airco Oxygen Therapy Line Regulator, Number 806 8681.

In the Council's investigation of the regulator, the valve was found to be accurate within reasonable limits when a delivered flow of oxygen (liters per minute) was checked against a large known volume displacement. It must be emphasized that the regulator is a single stage reducing unit, and it would be extremely dangerous to attach it to commercial oxygen tanks of 2,100 pounds pressure or to any line with pressure in excess of 50 pounds per square inch. A metal caution plate warning against the use of the regulator on inlet pressures greater than 50 pounds per square inch is fixed to the regulator.

The Council on Physical Therapy voted to accept the Airco Oxygen Therapy Line Regulator, Number 806 8681, for use on low pressure pipe lines.

BURDICK SUNLAMP, MODEL QS-4, ACCEPTABLE

Manufacturer: The Burdick Corporation, Milton, Wis.

The Burdick Sunlamp, Model QS-4, generates ultraviolet radiation of an intensity and spectral distribution which renders it suitable for unsupervised use by the layman. The ultraviolet source, an S-4 type bulb manufactured by the General Electric Company, is mounted in an adjustable stand. The reflector is said by the firm to be finished in such a manner as will provide an even and shadowless radiation over the exposed area. The unit operates on the usual house current —alternating current, 115 volt, 60 cycle, 125 watt current consumption. Twenty-five and forty cycle lamps are available. The unit has a 16 inch horizontal arm for extension over a bed or couch, and it is adjustable to a height of from 40 to 66 inches from the floor.

Burdick Sunlamp, Model QS-4.

The S-4 type bulb consists basically of a quartz mercury arc about 1½ inches long, enclosed in a specia' glass bulb which transmits ultraviolet wavelengths of 2,894, 2,967, 3,024 and 3,132 angstroms (and longer wavelengths) but which cuts off most of the wavelengths shorter than about 2,800 angstroms. The lamp

Relative Spectral Intensities (Galvanometer Deflections)

Wavelength (Angstroms)	Relative Energy (Average of 3 Lamps)
3,132	7.96
3,024	2.59
2,967	1.15
2,894	0.28
2,804	0.09
Total	12.07

produces the characteristic blue green light of the mercury line spectrum.

The firm states that on the average untanned skin surface, a visible "pink" glow or erythema is produced in less than five minutes at a 30 inch distance.

The Council investigated the radiation characteristics of the S-4 bulb; in this investigation the lamp was placed close in front of the quartz-fluorite achromatic spectroradiometer, and the spectral intensities were measured with a vacuum thermopile. The relative spectral intensities (galvanometer deflections) corrected for absorption in the spectroradiometer are given in the accompanying table.

The radiation at 2,804 angstroms (and shorter if measurable) is about 0.75 per cent of the total of all wavelengths, including 3,132 and shorter. Mounted in an aluminum reflector the radiation at 2,894 and shorter, relative to the total, would be still lower; hence these lamps comply with the Council's requirements for acceptability of a sunlamp for spectral quality of ultraviolet radiation.

The Council voted to accept the Burdick Sunlamp, Model QS-4, for inclusion on its list of accepted devices.

FISCHER INFRA-RED GENERATORS MODELS 2281, 4040 ACCEPTABLE

Manufacturer: H. G. Fischer & Company, 2323-2345 Wabansia Avenue, Chicago.

The Fischer Infra-Red Generators are designed to produce infra-red radiation. The lamps may be used with either a 200 or a 400 watt infra-red element. The firm states that the flexibility of the stand (the two models have similar stands except for the reflectors) permits flexibility application of infra-red radiation. The base and upright of the stand measures 48 inches; the extension bar supporting the reflector is 28 inches long.

Fischer Infra-Red Generator, Model 4040.

The adjustment clamp is set by turning the adjustment wing nut. The stands are mounted on casters and are provided with handles for lifting.

Model 2281 is provided with what the firm calls the "regular" reflector, and the 4040 lamp has a "special faceted" reflector. A bakelite covering which does not become heated is supplied on request. The reflectors are each 11 inches in diameter.

The firm states that the infra-red heating element is made of materials that will not blister or flake. The predominant output of the heating element is in the wavelengths beyond the visible range of the spectrum.

In the Council's clinical investigation of the lamps, they gave satisfactory service.

The Council voted to accept the Fischer Infra-Red Generators, Models 2281 and 4040, for inclusion on its list of accepted devices.

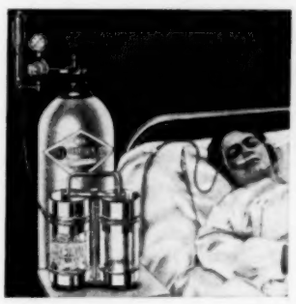
HEIDBRINK OROPHARYNGEAL CATHETER OUTFIT ACCEPTABLE

Manufacturer: The Ohio Chemical and Manufacturing Company, Heidbrink Division, Minneapolis.

The Heidbrink Oropharyngeal Catheter Outfit is designed for the oropharyngeal administration of oxygen. The apparatus is portable and consists of an automatic pressure reducing regulator with adapter for medical oxygen tanks, a flow meter, a humidifying jar, a drip jar and a nasal catheter. The unit is readily taken apart and reassembled; removal of a single nut permits the top to be taken off and thus provides access to the jars, which are of the ordinary fruit jar type.

When the catheter is properly placed, the automatic pressure regulating valve is opened and the oxygen flows through the apparatus at any desired rate up to 11 liters per minute of oxygen or 14 liters of helium-oxygen mixture, as registered by the dry float type flow meter. In operation, the oxygen is released by the automatic regulator and conducted first to the flow meter for registration of flow rate; next it is bubbled through the water in the humidifying jar. The moisture laden oxygen is then passed through the drip jar, which collects any drops of moisture, and is finally delivered through the nasal catheter to the patient.

The unit was investigated clinically by the Council. This investigation revealed that the meter is accurate within plus 3.5 per cent in the case of oxygen and within plus 7 per cent for the mixture of helium 80 per cent with oxygen 20 per cent. At no time did the apparatus deliver less of either gas or mixture than the meter indicated. The float in this meter showed a tendency to bob up and down at settings indicating 4 to 6 liters per minute of the helium-oxygen mixture.



Heidbrink Oropharyngeal Catheter Outfit.

The claim that relative humidity of more than 50 per cent results from oxygen flows of 5 liters per minute was substantiated by tests in an 8 liter chamber, when the apparatus was used as described in the advertising literature.

The Council voted to accept the Heidbrink Oropharyngeal Catheter Outfit for inclusion on its list of accepted devices.

Council on Pharmacy and Chemistry

REPORTS OF THE COUNCIL

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS.

OFFICE OF THE COUNCIL.

PHENYTOIN SODIUM THE NONPROPRIETARY NAME FOR SODIUM DIPHENYL HYDANTOINATE

The Council has adopted the designation "Phenytoin Sodium" (accented "phén-y-tŏin sodium") as a nonproprietary name for sodium diphenyl hydantoinate. Acceptance is continued of Dilantin Sodium, the proprietary name under which Parke, Davis & Co. markets its brand of sodium diphenyl hydantoinate as a brand of phenytoin sodium-N. N. R.

SULFADIAZINE AND SULFAGUANIDINE, NONPROPRIETARY NAMES FOR 2-SULFANILAMIDOPYRIMIDINE AND SULFANILYLGUANIDINE RESPECTIVELY

In view of the recent work that has been done with the sulfonamide derivatives 2-sulfanilamidopyrimidine and sulfanilylguanidine, the Council considered the recognition of nonproprietary names for these substances. For 2-sulfanilamidopyrimidine it adopted the term sulfadiazine and for sulfanilylguanidine the term sulfaguanidine. The latter term was adopted after consultation with Dr. E. K. Marshall Jr., who has done a considerable amount of work with this substance. Dr. Marshall kindly expressed his assent to the Council's recognition of the term.

SUPER D COD LIVER OIL AND SUPER D COD LIVER OIL CONCENTRATE (THE UPJOHN COMPANY) NOT ACCEPTABLE FOR N. N. R.

These preparations of the Upjohn Company have not been presented formally for the Council's consideration. In 1933 the Council declared Upjohn's Super D Cod Liver Oil unacceptable for inclusion in New and Nonofficial Remedies because of semisecret composition, indefinitely designated vitamin potency and

its objectionable name (THE JOURNAL, May 20, 1933, p. 1597). The firm had thus been informed that the term "Super D" is objectionable. It is pointed out that some accepted preparations are as potent if not more potent. Furthermore, recognition of such a term would lead only to the proposal of "Super Super" potencies.

It was brought to the attention of the Council's office by physicians that detail men of the Upjohn Company were making the claim that the Upjohn's Super D Cod Liver Oil and Super D Cod Liver Oil Concentrate were more effective than products utilizing other fish liver oils. The firm was asked for evidence to substantiate such a claim and replied by the citation of evidence which was inconclusive, at the same time asking that the Council offer evidence to support its opinion that all fish liver oils in equivalent dosages are equally effective. It was pointed out to the firm that the burden of proof rests on any one making a claim for such a difference. In this connection the Council's referee authorized transmission to the firm of the following statement:

The opinion that there is no important difference in the antirachitic activity of different fish oils was based in part on the following considerations: There appears to be no satisfactory evidence for the existence of important proportions of more than two forms of vitamin D in fish liver oil. These two forms of vitamin D are identical with the products formed by the activation of ergosterol and of 7-dehydrocholesterol. These two forms of vitamin D are referred to as vitamin D_2 and vitamin D_3 in German literature. Vitamin D_3 appears to account for the entire antirachitic activity of some fish liver oils and predominates in all the oils which have been examined. The relative efficacy of vitamin D_2 and vitamin D_3 in the prevention of rickets has been the subject of extensive clinical study, and there is convincing evidence that there is no important difference in their value for this purpose. Recognition must be given to the difficulties in interpreting clinical data, and conclusions cannot be drawn from a limited number of observations on infants.

The Upjohn Company agreed to delete from its advertising any claim which might be objectionable to the Council but could not agree to control the claims made by its detail men. Furthermore, the firm made no agreement to discontinue the use of the phrase "Super D."

In view of the foregoing, the Council reaffirmed its rejection of Super D Cod Liver Oil (Upjohn) and declared Super D Cod Liver Oil (Upjohn) and Super D Cod Liver Oil Concentrate (Upjohn) unacceptable for inclusion in New and Nonofficial Remedies.

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

OFFICE OF THE COUNCIL.

ĀMŸLCĀINE HYDROCHLORIDE. — Mono-*n*-amylaminoethyl-*p*-aminobenzoate hydrochloride. — $NH_2.C_6H_4.COO.CH_2.CH_2.NH.CH_2.CH_2.CH_2.CH_2.CH_3.HCL$.

Actions and Uses.—The actions of amylcaine hydrochloride resemble those of cocaine hydrochloride, but it does not cause mydriasis when the solution is dropped into the eye. In the present state of our knowledge its use should be restricted to the production of corneal anesthesia in those cases in which mydriasis is not desired. The toxicity varies rather widely with the species and with the mode of administration. The anesthesia is induced promptly with little smarting; it does not increase intraocular tension.

Dosage.—A 2 per cent solution is used in ophthalmology when mydriasis is not desired, 1 or 2 drops being usually sufficient.

Manufactured by Novocol Chemical Manufacturing Co., Inc., Brooklyn, N. Y. U. S. patent and U. S. trademark pending.

Amylcaine Hydrochloride 2%.

Amylcaine hydrochloride occurs as a fine, white, odorless powder which, when applied to the tongue, possesses a bitter taste followed by a sense of numbness. It is soluble in water, sparingly soluble in ethanol and insoluble in ether, benzene and chloroform. An aqueous solution is acid to litmus. The free base separates as a solid from amylcaine hydrochloride solutions on the addition of sodium hydroxide or carbonate solutions but not with sodium bicarbonate solution. Amylcaine hydrochloride melts at 173-174 C., and the free base at 65 C.

Dissolve 0.1 Gm. of amylcaine hydrochloride in 50 cc. of water; to one 5 cc. portion add 1 cc. of silver nitrate solution: a white precipitate results, soluble in excess of ammonia water; to another 5 cc. portion add 0.5 cc. of diluted hydrochloric acid, 0.5 cc. of a 10 per cent solution of sodium nitrite and then 10 cc. of ammonia water containing 0.2 Gm. of betanaphthol: an orange precipitate results, soluble in ether; to a 2 cc. portion add 1 cc. of potassium mercuric iodide solution: a white precipitate results; to a 2 cc. portion add 2 cc. of picric acid solution: a yellow precipitate results. Dissolve 0.1 Gm. of amylcaine hydrochloride in 5 cc. of water, add 2 drops of sulfuric acid and 1 cc. of a saturated solution of sodium nitrite, and heat to 50 C.: a yellow oil separates *(distinction from procaine, butyn, cocaine, tutocaine and pontocaine)*. Dissolve 0.1 Gm. of amylcaine hydrochloride in 1 cc. of sulfuric acid: the solution is colorless *(readily carbonizable substances)*. Saturate a solution of 0.1 Gm. in 10 cc. of water with hydrogen sulfide: no coloration or precipitation occurs *(salts of heavy metals)*.

Transfer about 0.5 Gm. of amylcaine hydrochloride, accurately weighed, to a tared platinum dish and dry at 100 C. for six hours: the loss in weight does not exceed 3 per cent. Incinerate about 0.5 Gm. of amylcaine hydrochloride, accurately weighed: the ash does not exceed 0.1 per cent. Transfer a sample of amylcaine hydrochloride, previously dried and accurately weighed, to a Kjeldahl flask and digest with sulfuric acid in the presence of 0.1 Gm. of selenium; dilute, make alkaline with sodium hydroxide solution, distil into standard acid and titrate the excess acid with standard alkali: the nitrogen content is not greater than 9.8 nor less than 9.4 per cent. Transfer about 0.5 Gm. of amylcaine hydrochloride, previously dried and accurately weighed, to a 250 cc. beaker and dissolve in 100 cc. of water. Heat to boiling and add 10 cc. of nitric acid and 20 cc. of silver nitrate solution, digest on the steam bath for three hours, filter, wash, dry and weigh the precipitate: the chloride content is not greater than 12.5 nor less than 12.0 per cent.

PERNOSTON SODIUM.—Sodium *sec.*-butyl-β-bromallylbarbiturate. — Sodium-5-(butyl-2)-5-β-brompropenylmalonylurea. —$[CH(CH_3)CH_2CH_3]$ $(CH_2CBr{=}CH_2)C.CONa.CO.NHCO$. The sodium salt of pernoston.

Actions and Uses.—The action of pernoston sodium is like that of pernoston except that the effects are induced almost immediately after its intravenous injection. It is used only when the oral administration of a barbiturate is not feasible either because of interference with swallowing or because prompt action is imperative, as in the presence of convulsions. The effects are delayed for from thirty to forty-five minutes after the intramuscular injection. The intravenous use demands the rigid observance of the proper technic. The contraindications are important.

Dosage.—One cc. of the 10 per cent solution (in ampules) per 12.5 Kg. (27½ pounds) of body weight injected intravenously at the rate of 1 cc. total per minute until the patient sleeps or until the full dose has been injected. The intramuscular dose is the same as that by vein, but it may be injected at once. Ampules containing a deposit should not be used.

Distributed by Riedel de Haen, Inc., New York. U. S. patent 1,739,662 (Dec. 17, 1929, expires 1946); U. S. trademark 266,216.

Ampules Pernoston 10%, 2 cc.

Pernoston sodium occurs as a fine, white, crystalline powder, possessing a bitter taste; soluble in water and alcohol; slightly soluble in ether and chloroform. A 10 per cent aqueous solution is alkaline to litmus and phenolphthalein and has a *p*H of approximately 9.5.

Transfer 5 cc. of a 10 per cent solution of pernoston sodium to a test tube, add 2 cc. of diluted hydrochloric acid; allow the precipitate to crystallize, filter, wash and recrystallize from an ethanol-water mixture: the melting point of the pernoston is from 130 to 133 C.

Transfer 5 cc. portions of a 10 per cent solution of pernoston sodium to two test tubes and to one add 1 cc. of mercury bichloride solution: a white precipitate results, soluble in 10 cc. of ammonium hydroxide; to the other portion add 5 cc. of silver nitrate solution: a white precipitate results, soluble in 5 cc. of ammonium hydroxide.

Dissolve 0.1 Gm. of pernoston sodium in 1 cc. of sulfuric acid: the liquid assumes a yellow color, changing to brownish red and finally to dark red. Acidify 40 cc. of a 10 per cent solution of pernoston sodium with diluted nitric acid and filter; separate portions of 10 cc. each of the filtrate yield no opalescence with 1 cc. of silver nitrate solution *(chloride)*; no turbidity with 1 cc. of barium nitrate solution *(sulfate)*; no coloration or precipitation on saturation with hydrogen sulfide *(salts of heavy metals)*.

Transfer about 0.5 Gm. of pernoston sodium, previously dried and accurately weighed, to a tared porcelain dish and add 2 cc. of sulfuric acid; evaporate the excess acid, ash the residue and ignite at 900 C.: the weight of sodium sulfate is not less than 21.4 per cent nor more than 22.2 per cent. Transfer about 0.3 Gm. of pernoston sodium, dried and accurately weighed, to a bomb tube and determine the bromine content by means of the Carius method: the bromine found is not less than 24.3 per cent nor more than 24.8 per cent. Transfer a sample of pernoston sodium, dried and accurately weighed, to a kjeldahl flask and digest with sulfuric acid in the presence of selenium, dilute, make alkaline, distil into standard acid and titrate the excess acid with standard alkali: the nitrogen content is not less than 8.3 per cent nor more than 8.8 per cent.

PHENOBARBITAL SODIUM (See New and Nonofficial Remedies, 1940, p. 135).

The following dosage form has been accepted:

Ampules Phenobarbital Sodium (Powder) Lakeside, 0.13 Gm. (2 Grains).

Prepared by The Lakeside Laboratories, Inc., Milwaukee, Wis. No U. S. patent or trademark.

Antipneumococcic Serum, Type I (See New and Nonofficial Remedies, 1940, p. 429).

E. R. Squibb & Sons, New York.

Antipneumococcic Serum, Type I (Refined and Concentrated) (See New and Nonofficial Remedies, 1940, p. 431): Also marketed in syringes containing 50,000 units of the type I pneumococcus.

MEDICAL LICENSURE STATISTICS FOR 1940

THIRTY-NINTH ANNUAL PRESENTATION OF LICENSURE STATISTICS BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

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Statistical compilations regarding licensure, medical and allied, are presented annually in the State Board Number of THE JOURNAL. In the following pages will be found the report for the year 1940, which constitutes the thirty-ninth annual presentation. Data are included as usual regarding (*a*) medical examining and licensing boards of the United States, the District of Columbia, the territories and the possessions of the United States, (*b*) boards of examiners in the basic sciences and (*c*) the National Board of Medical Examiners.

Official records which form the basis of these computations have been contributed throughout the year by the medical licensing boards of all states, the District of Columbia, Alaska, Hawaii, Puerto Rico and the Virgin Islands; the homeopathic medical licensing boards of Connecticut, Delaware and Maryland; the sixteen boards of examiners in the basic sciences in operation last year (Arizona, Arkansas, Colorado, Connecticut, District of Columbia, Florida, Iowa, Michigan, Minnesota, Nebraska, Oklahoma, Oregon, Rhode Island, South Dakota, Washington and Wisconsin) and the National Board of Medical Examiners. The homeopathic and eclectic examining boards of Arkansas and the homeopathic examining board in Louisiana did not license any one during the year. Likewise no physicians were registered for civilian practice in the Canal Zone.

The cooperation of the officers of the foregoing boards in making possible the vast amount of reliable information presented in the following pages is gratefully acknowledged. The Council and THE JOURNAL express thanks and appreciation to those who have supplied these data, for without such help the presentation of the calculations presented would not have been possible.

THE JOURNAL publishes each week the dates of future examinations, in the column "Medical Examination and Licensure," of state licensing and basic science boards, special examining boards and the National Board of Medical Examiners. Soon after they are held, blanks for recording such tests are regularly mailed. Such reports remain permanently in the archives of the Association. Reports of all examinations and those licensed by endorsement of credentials are carefully checked with the biographic file of physicians and the

(CONTINUED ON PAGE 2024)

TABLE 1.—*Licenses Issued, 1940*

	On the Basis of		
	Examination	Reciprocity and Endorsement	Total
Alabama	10	52	62
Arizona	21	15	36
Arkansas	58	26	84
California	396	212	608
Colorado	75	17	92
Connecticut	58	67	125
Delaware	15	1	16
District of Columbia	49	55	104
Florida	131	..	131
Georgia	88	35	123
Idaho	40	..	40
Illinois	542	148	690
Indiana	119	72	191
Iowa	98	82	180
Kansas	92	19	111
Kentucky	82	49	131
Louisiana	159	26	185
Maine	32	15	47
Maryland	175	48	223
Massachusetts	338	113	451
Michigan	203	137	340
Minnesota	196	29	225
Mississippi	42	33	75
Missouri	179	79	258
Montana	9	27	36
Nebraska	84	15	99
Nevada	3	11	14
New Hampshire	12	38	50
New Jersey	179	164	343
New Mexico	..	46	46
New York	956	334	1,290
North Carolina	65	80	145
North Dakota	24	11	35
Ohio	308	136	444
Oklahoma	45	36	81
Oregon	33	23	56
Pennsylvania	477	84	561
Rhode Island	19	5	24
South Carolina	41	17	58
South Dakota	7	8	15
Tennessee	197	41	238
Texas	209	146	355
Utah	6	17	23
Vermont	20	22	42
Virginia	142	80	222
Washington	48	47	95
West Virginia	38	50	88
Wisconsin	113	46	159
Wyoming	16	6	22
Alaska, Hawaii, Puerto Rico and the Virgin Islands	28	18	46
Totals	6,277	2,838	9,115

Marginal Number	SCHOOL	1 Alabama P	F	2 Arizona P	F	3 Arkansas P	F	4 California P	F	5 Colorado P	F	6 Connecticut P	F	7 Delaware P	F	8 Dist. Columbia P	F	9 Florida P	F	10 Georgia P	F	11 Idaho P	F	12 Illinois P	F	13 Indiana P	F	14 Iowa P	F	15 Kansas P	F	16 Kentucky P	F	17 Louisiana P	F	18 Maine P	F	19 Maryland P	F	20 Massachusetts P	F	21 Michigan P	F	22 Minnesota P	F
	ARKANSAS																																												
1	University of Arkansas School of Medicine					57	0	2	1																															1	0				
	CALIFORNIA																																												
2	College of Medical Evangelists			1	0			53	1	4	0			1	0	1	0					3	0	2	0	1	0			1	0							1	0	1	0	8	0		
3	Stanford University School of Medicine							53	1																																				
4	University of California Medical School			1	0			55	1																											2	0			1	0			1	0
5	University of Southern California Sch. of Med.							33	0	1	0																																	1	0
	COLORADO																																												
6	University of Colorado School of Medicine							1	0	45	0											1	0																						
	CONNECTICUT																																												
7	Yale University School of Medicine											4	0					1	0							1	0													1	0	1	0	3	0
	DISTRICT OF COLUMBIA																																												
8	George Washington University School of Med.							1	0			1	1			24	1	1	0			1	0									1	0					3	0	1	0				
9	Georgetown University College of Medicine							1	0			1	1			8	0	3	0																	1	1	3	0	4	0	2	0		
10	Howard University College of Medicine	1	0													2	1							1	0									1	0			2	0						
	GEORGIA																																												
11	Emory University School of Medicine	2	0															13	0	45	0																			1	0				
12	University of Georgia School of Medicine																	13	0	32	0																								
	ILLINOIS																																												
13	Loyola University School of Medicine			1	0			6	1	1	0	1	0									1	0	76	0	3	0			1	0									1	1	3	0	3	0
14	Northwestern University Medical School	1	0					14	0									3	0	1	0	10	0	62	0	1	0			4	0			3	0							8	0	2	0
15	University of Chicago, Rush Medical College	2	0	1	0			7	1			1	0			1	0	6	1	2	0	5	0	51	0	1	0	1	0	1	0	1	0	2	0			2	0			3	0	6	0
16	University of Chicago, The School of Medicine							3	1	1	0													17	0			1	0							1	0					5	0	4	0
17	University of Illinois College of Medicine			1	0			9	0	1	0							4	0			2	0	140	0	2	0			1	0	1	0	1	0					1	0	1	0	6	0
	INDIANA																																												
18	Indiana University School of Medicine									1	0	1	0					3	0					1	0	102	0													1	0			2	0
	IOWA																																												
19	State University of Iowa College of Medicine							2	1													1	0					52	2											1	0	1	0	4	0
	KANSAS																																												
20	University of Kansas School of Medicine																	1	0											69	0									1	0	1	0	3	0
	KENTUCKY																																												
21	University of Louisville School of Medicine							1	0									1	0			1	0			2	0					69	0	2	0							1	0	3	0
	LOUISIANA																																												
22	Louisiana State University School of Medicine	1	0	1	0	1	0	2	0			1	0					2	0															63	0									3	0
23	Tulane University of Louisiana School of Med.	8	0	1	0			2	0	1	0							8	0	2	0													71	1					1	0			3	0
	MARYLAND																																												
24	Johns Hopkins University School of Medicine			1	0			5	1			3	0			1	0	2	0					1	0	1	0											43	0	6	0	1	0	4	0
25	University of Maryland School of Medicine and College of Physicians and Surgeons											1	0					3	0			1	0															76	1	0	1				
	MASSACHUSETTS																																												
26	Boston University School of Medicine							1	1																											1	2			6	0				
27	Harvard Medical School	2	0	1	0			3	0	1	0	4	0					2	1	1	0									1	0	1	0			2	0	2	0	1	0	20	0	3	0
28	Tufts College Medical School											2	1			1	0	2	0											1	0			1	0			6	2	2	0	12	0	1	0
	MICHIGAN																																												
29	University of Michigan Medical School							3	0			1	0					1	1			1	0																			3	0	11	9	0	4	0
30	Wayne University College of Medicine							2	0									1	0																							5	8	0			
	MINNESOTA																																												
31	University of Minnesota Medical School			2	0			7	0							1	0	5	0					1	0			1	0	1	0			1	0			1	0	1	0	8	0	2	0
	MISSOURI																																												
32	St. Louis University School of Medicine			1	1			11	2									0	1			1	0	1	0															3	0				
33	Washington University School of Medicine							2	1			2	0									2	0	2	0																	3	0	1	0	2	0
	NEBRASKA																																												
34	Creighton University School of Medicine			1	0			14	0	1	0											2	0					2	0	8	0													3	0
35	University of Nebraska College of Medicine			1	0			5	0	1	0							1	0			1	0							1	0									1	0			4	0
	NEW YORK																																												
36	Albany Medical College																	2	0																	1	0									
37	Columbia University Coll. of Phys. and Surgs.			2	0			5	0					2	0	5	0					1	0			1	0			1	0					1	1	1	0	4	0	2	0
38	Cornell University Medical College							1	0			1	0					1	0	1	0																	1	0	1	0	1	0		
39	Long Island College of Medicine	1	0															4	0																										
40	New York Medical College, Flower and Fifth Avenue Hospitals							1	0			1	0					1	0																							1	0		
41	New York University College of Medicine	1	0					1	0			1	0			1	0	2	1	1	0																			2	0				
42	Syracuse University College of Medicine							1	0			1	0									1	0																			2	0				
43	University of Buffalo School of Medicine									1	0																															2	0	1	0
44	Univ. of Rochester Sch. of Med. and Dentistry											1	0					1	0	1	0															2	0			1	0			1	0
	NORTH CAROLINA																																												
45	Duke University School of Medicine																	4	0									1	0													1	0	2	0
	OHIO																																												
46	Ohio State University College of Medicine																	3	0																					0	1				
47	University of Cincinnati College of Medicine					0	1			1	0							5	0					1	0											1	0					1	0	1	0
48	Western Reserve University School of Medicine																					1	0													1	0					1	0	1	0
	OKLAHOMA																																												
49	University of Oklahoma School of Medicine					5	0							1	0	1	0					1	0	1	0																			
	OREGON																																												
50	University of Oregon Medical School			1	0			10	0													2	0	1	0	1	0							1	0									2	0
	PENNSYLVANIA																																												
51	Hahnemann Medical Coll. and Hosp. of Phila.							1	1			3	0	3	0									2	0											2	0	11	1	1	3			1	0
52	Jefferson Medical College of Philadelphia											4	0	1	0	2	0																					1	0	5	0	1	0	1	0
53	Temple University School of Medicine			1	0			1	0			1	0	4	0			2	0			1	0															2	0						
54	University of Pennsylvania School of Medicine	2	0					2	0			1	0	1	0	1	0	2	0	1	0			1	0			1	0	1	0	2	0			2	0	4	0	1	0	1	0	1	0
55	University of Pittsburgh School of Medicine																																												
56	Woman's Medical College of Pennsylvania							2	0					1	0									1	0																			1	0
	SOUTH CAROLINA																																												
57	Medical College of the State of South Carolina	3	0															1	0																										
	TENNESSEE																																												
58	Meharry Medical College																	4	0																	2	0									
59	University of Tennessee College of Medicine			1	0									1	0			8	0																					1	0	1	0		
60	Vanderbilt University School of Medicine	2	0															1	0																										

P = Passed; F = Failed.

Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Alaska, Hawaii and Puerto Rico	Totals	Examined—Passed	Examined—Failed	Percentage—Failed	No. Boards Examined by	Marginal Number
P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
								5 1						1 0				2 0										71	69	2	2.8	7	1
	1 0			1 0						1 0			2 0 3 0 1 0					1 0 1 0					2 0 1 0 2 0					94	93	1	1.1	23	2
																							1 0					57	56	1	1.8	3	3
											1 0												1 0				1 0	64	63	1	1.6	8	4
	1 0																											36	36	0	0.0	4	5
																											1 0	48	48	0	0.0	4	6
											1 0			1 0														13	13	0	0.0	8	7
					3 0			2 3			2 0			2 0					1 0			7 0 1 0						56	51	5	8.9	15	8
					12 1			11 13						11 0 1 0								2 0					2 0	78	62	16	20.5	14	9
					1 0			1 0 5 0						4 0				1 0				9 0					1 0	30	29	1	3.3	12	10
					1 0			1 1 2 0										1 0		1 0								68	67	1	1.5	9	11
					1 0			1 0																				46	46	0	0.0	3	12
	1 0 1 0				3 0			1 5		1 0 9 0				2 0				1 0					3 0		3 0 1 0			130	123	7	5.4	22	13
	9 0 2 0				1 0			5 1		1 0 2 0				5 0			2 0 2 0 1 1 2 0					6 0 1 0 10 0				1 0		179	177	2	1.1	25	14
	3 0 1 0 1 0				2 0			7 4 2 0 5 0 1 0			2 0 1 0					2 0		1 0 3 0				4 0 2 0 6 0					142	136	6	4.2	33	15
					1 0			1 1 1 0		1 0															1 0			40	38	2	5.0	13	16
	2 0 2 0							2 3														2 0		4 0	1 0	1 0		187	184	3	1.6	20	17
								0 1			1 0											3 0						116	115	1	0.9	10	18
											1 0															1 0		66	63	3	4.5	8	19
	1 0							1 1		1 0												1 0			1 0			81	80	1	1.2	10	20
3 0 2 0					2 0			5 1		1 0 2 0																1 0		94	93	1	1.1	14	21
								4 2	1 0					1 0														79	77	2	2.5	10	22
2 0 1 0					1 0			2 0 3 0						1 0		1 0			3 0							4 0		140	139	1	0.7	18	23
				0 1					3 0	2 0			5 0 1 0 1 0					1 0			1 0		1 0		1 0			85	83	2	2.4	20	24
					1 0			1 1 8 0					7 0						1 0				3 0					105	102	3	2.9	11	25
					2 0			2 0 1 0																				16	13	3	18.7	6	26
	1 0			1 0	3 0			7 2 2 0		5 0			5 0					1 0 3 0					1 0 3 0		1 0		87	84	3	3.4	27	27
				3 0				0 1					2 0 1 0														39	35	4	10.3	14	28
								6 5		1 0			2 0									3 0 1 0				1 0		152	146	6	3.9	13	29
								1 1																	1 0			64	63	1	1.6	5	30
	1 0 1 0							1 1		9 0			2 0								1 0			4 0 1 0 1 0			133	132	1	0.8	21	31
	1 0			1 0	1 0			1 7		1 0		2 0 3 1 1 0										1 0 2 0						108	96	12	11.1	17	32
	7 8 0							3 2 2 0		1 0			1 0					1 0 0 1				1 0						104	100	4	3.8	15	33
	1 0		15 0		2 0			4 4			3 1			1 0					1 0		1 0 2 0				1 0			67	62	5	7.5	17	34
	1 0		68 0		0 1			1 2					1 0 1 0			1 0								3 1				95	91	4	4.2	16	35
																												3	3	0	0.0	2	36
					4 0			58 17								1 0						1 0 2 0				2 0		111	93	18	16.2	17	37
								29 13 1 0		2 0			5 0 1 0								1 0							61	48	13	21.3	14	38
					4 0			38 5																		1 0		53	48	5	9.4	5	39
					3 0			11 0		3 0									1 0		1 0							23	23	0	0.0	9	40
	1 0				2 0			75 20		1 0			1 0			1 0						2 0						113	92	21	18.6	14	41
					1 0			25 9																				40	31	9	22.5	6	42
								19 10					2 0 1 0															36	26	10	27.8	6	43
					1 0			12 3 1 0		3 0			2 0				1 0											30	27	3	10.0	12	44
								7 0					1 0					1 0			1 0							18	18	0	0.0	8	45
										77 0															1 0		1 0	83	82	1	1.2	5	46
					1 0					76 0																		88	87	1	1.1	9	47
					1 0					58 0			2 0															66	66	0	0.0	8	48
											47 0 2 0 1 0 1 0							1 0							2 0			63	63	0	0.0	11	49
	1 0							1 0		2 0			19 0			1 0						9 0		2 0 1 0				54	54	0	0.0	15	50
	2 0				16 0			6 10 1 0 1 0 7 0					70 10 4 0														1 0	157	132	25	15.9	17	51
	1 0				15 0			8 5 8 0		4 0			75 0		1 0							1 0				1 0		135	130	5	3.7	17	52
					11 0			3 6 5 0 1 0					81 2				1 0		1 0			2 0				1 0		127	119	8	6.3	17	53
					4 0			5 4 5 0 1 0 3 0					74 0		2 0		1 0 3 0 1 0				2 0						1 0		130	126	4	3.1	28	54
										1 0			50 2															54	52	2	3.7	3	55
								1 3					14 0															23	20	3	13.0	6	56
													4 0	32 0													1 0		41	41	0	0.0	5	57
																	39 1											46	45	1	2.2	3	58
													2 0				80 0 1 0					1 0						104	104	0	0.0	10	59
																	52 0											56	56	0	0.0	4	60
23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

Marginal Number	SCHOOL	1 Alabama P	F	2 Arizona P	F	3 Arkansas P	F	4 California P	F	5 Colorado P	F	6 Connecticut P	F	7 Delaware P	F	8 Dist. Columbia P	F	9 Florida P	F	10 Georgia P	F	11 Idaho P	F	12 Illinois P	F	13 Indiana P	F	14 Iowa P	F	15 Kansas P	F	16 Kentucky P	F	17 Louisiana P	F	18 Maine P	F	19 Maryland P	F	20 Massachusetts P	F	21 Michigan P	F	22 Minnesota P	F	Marginal Number
	TEXAS																																													
61	Baylor University College of Medicine	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	61
62	University of Texas Faculty of Medicine	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	1	0	1	0	4	0	62
	VERMONT																																													
63	University of Vermont College of Medicine	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	63
	VIRGINIA																																													
64	Medical College of Virginia	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	64
65	University of Virginia Department of Medicine	..	..	..	..	..	..	1	0	..	..	..	..	..	..	1	0	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	65
	WISCONSIN																																													
66	Marquette University School of Medicine	..	..	..	..	..	..	5	0	..	..	1	2	..	..	..	..	1	0	..	..	..	..	..	..	5	0	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	5	0	5	0	66
67	University of Wisconsin Medical School	..	..	..	..	..	..	4	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	3	0	67
	CANADA																																													
68	Dalhousie University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	68
69	Laval University Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	69
70	McGill University Faculty of Medicine	..	..	..	..	..	..	10	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	4	1	..	..	5	0	1	0	4	0	70				
71	Queen's University Faculty of Medicine	..	..	..	..	..	..	1	0	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	71
72	University of Alberta Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	..	..	..	..	..	..	..	..	..	..	72
73	University of Manitoba Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	73
74	University of Montreal Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	1	1	..	..	..	..	74
75	University of Toronto Faculty of Medicine	..	..	..	..	..	..	5	0	..	..	1	0	..	..	1	0	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	1	0	..	..	..	..	1	0	1	0	1	0	75
76	University of Western Ontario Medical School	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	76		
77	Foreign Medical Faculties	..	..	..	..	..	..	37	10	..	..	13	23	..	..	..	..	1	0	..	..	1	1	119	22	1	0	4	3	..	..	..	..	..	..	..	..	6	5	19	16	112	111	..	..	..	..	77
78	Extinct Medical Schools	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	78
79	Unapproved Schools	..	..	..	..	..	..	1	1	15	4	0	3	..	..	1	0	..	..	..	..	..	..	48	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	125	178	..	..	..	..	79
80	Totals	26	21	58	425	79	86	15	51	137	88	41	566	118	72	92	77	155	46	193	636	247	196	80																								
81	Totals—Examined—Passed	26	20	58	396	75	53	15	49	131	88	40	542	118	67	92	77	154	32	175	338	247	196	81																								
82	Totals—Examined—Failed	0	1	0	29	4	33	0	2	6	0	1	24	0	5	0	0	1	14	18	298	0	0	82																								
83	Percentage Failed	0.0	4.8	0.0	6.8	5.1	38.4	0.0	3.9	4.4	0.0	2.4	4.2	0.0	6.9	0.0	0.0	0.6	30.4	9.3	46.9	0.0	0.0	83																								
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																								

P = Passed; F = Failed.

(CONTINUED FROM PAGE 2021)

proper entry is made. In the occasional instance in which the applicant, according to the record on file, has not graduated or there is some irregularity, the board is notified. These reports are then used as the basis of the statistical compilations and then permanently filed.

Since 1927 credentials of physicians coming from abroad have been verified by official correspondence. This has been impossible for several years and we are relying on the licensing boards in the various states to determine the authenticity of credentials from medical schools outside the United States and Canada. Later in this presentation statistics have been computed separately showing the physicians examined on the basis of certificates obtained in countries other than the United States and Canada during 1940, and also for comparison the number so examined in ten previous years.

TABLE 3.—*Licenses Issued, 1935-1940*

	Examination	Reciprocity and Endorsement	Total
1935	5,718	2,193	7,911
1936	6,273	2,771	9,044
1937	6,627	3,203	9,830
1938	6,553	2,956	9,509
1939	6,395	2,872	9,267
1940	6,277	2,838	9,115
Totals	37,843	16,833	54,676

More than thirty licensing boards obtain from the Council verification of biographic data and other claims before granting a license or permission to take the licensing examination. This service is available to all boards.

The tables referring to medical licensing boards include figures regarding the number of candidates examined for medical licensure in 1940, the number licensed and the number added to the profession. The state boards are discussed first, followed by the basic science boards and the National Board of Medical Examiners.

LICENSES ISSUED

In the first table are presented the number of licenses issued in the various states, territories and possessions, both by examination and by reciprocity or endorsement of state licenses or by the certificate of the National Board of Medical Examiners. During the year 1940 there were 9,115 licenses issued for the practice of medicine and surgery in the forty-eight states, the District of Columbia, Alaska, Hawaii, Puerto Rico and the Virgin Islands. Of the 9,115 licenses, 6,277 were issued after examination and 2,838 by reciprocity and endorsement.

Twenty-one states, the District of Columbia, Alaska, Hawaii and Puerto Rico require that applicants for licensure possess a hospital internship (table 20). However, the licensing boards permit the candidate to take the examination and if successful the license is withheld until completion of the internship. The 9,115 licenses issued include, therefore, many candidates who were examined in 1939 and even a few in previous years. Licenses are also withheld for proof of citizenship and minor technicalities. In some states also the licenses of those examined in December are dated and issued early in the following year. The figures in this table will not correspond with those hereinafter given.

New York issued the largest number of licenses, 1,290. Illinois granted 690 licenses, California 608 and Pennsylvania 561. These states are the only ones which registered more than 500. Twenty-four states, Alaska, Hawaii, Puerto Rico and the Virgin Islands issued licenses to fewer than 100. None were licensed by examination in New Mexico or the Virgin Islands. Three were registered in Alaska, 18 in Hawaii, 19 in

	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50					
Marginal Number	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Alaska, Hawaii and Puerto Rico	Totals	Examined—Passed	Examined—Failed	Percentage—Failed	No. Boards Examined by	Marginal Number
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
81	1 0														2 0					73 11								1 0	90	79	11	12.2	6	61
82																				88 4									103	99	4	3.9	8	62
83									0 1													18 0							23	21	2	8.7	4	63
84									2 1	7 0									1 0			49 0		10 0			1 0		74	72	2	2.7	9	64
85										1 0					1 1							61 0		2 0					71	69	2	2.8	8	65
86							7 0		4 5		1 0				1 0								1 0		33 0				78	71	7	9.0	14	66
87	1 0								1 0			2 0		1 0				1 0				1 0			42 0	1 0			64	64	0	0.0	14	67
88							2 0		13 6						1 0														22	16	6	27.3	3	68
89									0 1																1 0				4	1	3	75.0	4	69
90						2 0			12 7			2 0			3 0	1 0						1 0	1 0					1 0	60	49	11	18.3	15	70
91	1 0								6 3																			1 0	15	12	3	20.0	7	71
92									1 1																				4	3	1	25.0	3	72
93									1 1									1 0		1 0									6	5	1	16.7	5	73
94									0 1																				4	1	3	75.0	3	74
95	1 0								5 2			3 0			1 0	3 0			2 0				1 0						32	30	2	6.2	17	75
96									9 2										1 0										16	13	3	18.7	5	76
97	3 0						27 29	0 1	535 894			32 15			19 8	2 0				3 3		2 1	3 1	5 0		1 0		3 1	2,092	948	1,144	54.7	23	77
98																									1 0				5	5	0	0.0	4	78
99						2 1	47 5								5 0					26 5						1 0	1 0	1 1	473	273	200	44.4	13	79
80	42	42	179	9	84	4	10	215	1	2,049	65	24	321	47	33	502	19	41	7	189	234	9	22	143	48	38	113	17	31	7,921	.....	.....	.....	..	80
81	42	42	179	9	84	3	9	179	0	956	65	24	305	47	33	478	19	41	7	188	209	9	21	142	48	38	113	16	29	.....	6,282	.....	.....	..	81
82	0	0	0	0	0	1	1	36	1	1,093	0	0	16	0	0	24	0	0	0	1	25	0	1	1	0	0	0	1	2	.....	.....	1,639	.....	..	82
83	0.0	0.0	0.0	0.0	25.0	10.0	16.7	100.0	53.3	0.0	0.0	5.0	0.0	0.0	4.8	0.0	0.0	0.0	0.5	10.7	0.0	4.5	0.7	0.0	0.0	0.0	5.9	6.5	.....	.....	.....	20.7	..	83
	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50						

Puerto Rico and 6 in the Virgin Islands. Of these, 18 were granted certificates by endorsement of credentials, including 1 in Alaska, 9 in Hawaii, 2 in Puerto Rico and the 6 already mentioned in Virgin Islands. The states of Florida and Idaho grant licenses only on the basis of examination. Massachusetts and Rhode Island have no reciprocity privileges but endorse diplomates of the National Board of Medical Examiners.

Figures for five previous years and 1940 giving totals by years of the number of licenses issued on the basis of examination and endorsement are contained in table 3. Since 1937 fewer licenses have been issued annually. However, licenses issued do not represent individuals since several have been licensed in more than one state during a year. Nor do they represent additions to the medical profession at large since the majority of those licensed by reciprocity and endorsement, with the exception of the diplomates of the National Board of Medical Examiners, have migrated from other states. Table 15 shows how many of those licensed were never before registered and therefore represent the number added to the medical profession in the United States and territories and possessions.

Referring again to table 3, it will be noted that in six years 54,676 licenses have been issued, 37,843 by examination and 16,833 by endorsement of credentials.

CANDIDATES EXAMINED BY MEDICAL EXAMINING BOARDS, 1940

Table 2 records data referring to those examined for medical licensure by individual states throughout the year and gives the number who passed and failed in each state and the medical school of graduation. There were 7,921 examined, of whom 6,282 passed and 1,639 failed, representing sixty-seven approved medical schools in the United States and nine of the medical schools of Canada, one hundred and two faculties of medicine and four licensing corporations of other countries, five medical schools now extinct, eight unapproved institutions and eight osteopathic colleges. Osteopaths who are granted the privilege to practice medicine, surgery, or both, by the medical board are included in these statistics, eliminating for instance those osteopaths in California who receive these privileges as physicians and surgeons from an osteopathic board. There were 5,188 graduates of approved medical schools in the United States examined, of whom 5.1 per cent failed; 163 graduates of approved Canadian schools, 20.2 per cent of whom failed; 2,092 graduates of schools outside the United States and Canada,

TABLE 4.—*Source of Candidates Examined, 1940*

Medical Schools	Number	Number Examined	Number Passed	Number Failed	Percentage Failed
Approved, in United States.	67	5,188	4,926	262	5.1
Approved, in Canada.....	9	163	130	33	20.2
Extinct.....	5	5	5	..	0.0
Foreign.....	106	2,092	948	1,144	54.7
Unapproved schools.....	16	473	273	200	44.4
Totals.....	203	7,921	6,282	1,639	20.7

principally in Europe, with 54.7 per cent failures; five who graduated from medical schools now extinct, all of whom passed, and 473 from unapproved and osteopathic schools, of whom 44.4 per cent failed. These 473 represented 174 graduates of osteopathic schools, of whom 114 passed and 60, or 34.9 per cent, failed and 299 graduates of unapproved schools, of whom 159 passed and 140, or 46.9 per cent, failed. Graduates of osteopathic schools were examined by the medical boards of eight states and the District of Columbia, namely Colorado, Connecticut, Massachusetts, New Hampshire, New Jersey, Texas, Wisconsin and Wyoming, while graduates of unapproved schools were examined in five states and Puerto Rico. These states

TABLE 5.—GRADUATES OF 1938, 1939 AND 1940

Marginal Number	SCHOOL	1 Alabama P	F	2 Arizona P	F	3 Arkansas P	F	4 California P	F	5 Colorado P	F	6 Connecticut P	F	7 Delaware P	F	8 Dist. Columbia P	F	9 Florida P	F	10 Georgia P	F	11 Idaho P	F	12 Illinois P	F	13 Indiana P	F	14 Iowa P	F	15 Kansas P	F	16 Kentucky P	F	17 Louisiana P	F	18 Maine P	F	19 Maryland P	F	20 Massachusetts P	F	21 Michigan P	F	22 Minnesota P	F	Marginal Number
	ARKANSAS																																													
1	University of Arkansas School of Medicine					57	0	2	1																															1	0						1
	CALIFORNIA																																													
2	College of Medical Evangelists							53	1	4	0			1	0	1	0					1	0	2	0	1	0			1	0							1	0	1	0	8	0					2
3	Stanford University School of Medicine							53	1																																					3
4	University of California Medical School			1	0			56	1																																			1	0		4
5	University of Southern California Sch. of Med.							32	0	1	0																									1	0					1	0				5
	COLORADO																																													
6	University of Colorado School of Medicine							1	0	4	5	0										1	0																								6
	CONNECTICUT																																													
7	Yale University School of Medicine											4	0													1	0													1	0	1	0	1	0		7
	DISTRICT OF COLUMBIA																																													
8	George Washington University School of Med.											1	1			22	0													1	0							3	0						8
9	Georgetown University School of Medicine											1	0			5	0																	1	0	2	0	1	0	2	0				9
10	Howard University College of Medicine															1	0							1	0													2	0						10
	GEORGIA																																													
11	Emory University School of Medicine	2	0															12	0	45	0																								11
12	University of Georgia School of Medicine																	11	0	32	0																								12
	ILLINOIS																																													
13	Loyola University School of Medicine			1	0			6	1	1	0	1	0									1	0	76	0	3	0			1	0									0	1	3	0	3	0	13
14	Northwestern University Medical School	1	0					14	0									2	0	1	0	5	0	60	0	1	0			3	0			2	0							8	0	19	0	14
15	University of Chicago, Rush Medical College	2	0	1	0			7	1			1	0					1	0	1	0	4	0	49	0	1	0	1	0	1	0	1	0	2	0							3	0	6	0	15
16	University of Chicago, The School of Medicine							3	0	1	0													15	0					1	0							1	0			5	0	3	0	16
17	University of Illinois College of Medicine			1	0			6	0									1	0					139	0	2	0			1	0	1	0	1	0							1	0	6	0	17
	INDIANA																																													
18	Indiana University School of Medicine									1	0							3	0					1	0	102	0															1	0			1	0	18
	IOWA																																													
19	State University of Iowa College of Medicine							2	1															1	0			52	0															1	0	2	0	19
	KANSAS																																													
20	University of Kansas School of Medicine																													69	0											1	0	2	0	20
	KENTUCKY																																													
21	University of Louisville School of Medicine							1	0									1	0			1	0			2	0					68	0	2	0							1	0			21
	LOUISIANA																																													
22	Louisiana State University School of Medicine	1	0	1	0	1	0	2	0			1	0					1	0													62	0													22
23	Tulane University of Louisiana Sch. of Med.	8	0					2	0	1	0							5	0	2	0											70	1											1	0	23
	MARYLAND																																													
24	Johns Hopkins University School of Medicine			1	0			2	0			3	0													1	0													43	0	1	0			3	0	24
25	University of Maryland School of Medicine and College of Physicians and Surgeons											1	0																									76	1							25
	MASSACHUSETTS																																													
26	Boston University School of Medicine							1	0																											1	1			6	0					26
27	Harvard Medical School	1	0	1	0			2	0	1	0	3	0							1	0											1	0					1	0	12	0	3	0	2	0	27
28	Tufts College Medical School											1	0					2	0													1	0			5	0	2	0	6	0	1	0			28
	MICHIGAN																																													
29	University of Michigan Medical School							3	0			1	0					1	0									1	0											1	0	119	0	1	0	29
30	Wayne Univeresity College of Medicine							2	0									1	0																					58	0					30
	MINNESOTA																																													
31	University of Minnesota Medical School			2	0			7	0									2	0					1	0													1	0			8	0	8	0	31
	MISSOURI																																													
32	St. Louis University School of Medicine			1	1			11	2													1	0																	2	0					32
33	Washington University School of Medicine							2	0			1	0									2	0	2	0																	1	0			33
	NEBRASKA																																													
34	Creighton University School of Medicine			1	0			14	0	1	0																	2	0	8	0													3	0	34
35	University of Nebraska College of Medicine			1	0			5	0	1	0											1	0																					3	0	35
	NEW YORK																																													
36	Albany Medical College																	1	0																	1	0									36
37	Columbia University Coll. of Phys. and Surgs.			1	0			5	0							1	0	2	0					1	0	1	0			1	0							1	0	2	0					37
38	Cornell University Medical College							1	0			1	0							1	0																					1	0	1	0			38
39	Long Island College of Medicine	1	0															1	0																											39
40	New York Medical College, Flower and Fifth Avenue Hospitals							1	0			1	0					1	0																							1	0					40
41	New York University College of Medicine	1	0					1	0			1	0							1	0																			2	0							41
42	Syracuse University College of Medicine							1	0			1	0																													2	0					42
43	University of Buffalo School of Medicine									1	0																															2	0					43
44	University of Rochester School of Medicine and Dentistry											1	0					1	0	1	0																	2	0							44
	NORTH CAROLINA																																													
45	Duke University School of Medicine																	2	0									1	0															1	0	2	0	45
	OHIO																																													
46	Ohio State University College of Medicine																	1	0																											46
47	Univeresity of Cincinnati College of Medicine							0	1			1	0					2	0					1	0											1	0					1	0	1	0	47
48	Western Reserve University School of Medicine																					1	0																			1	0			48
	OKLAHOMA																																													
49	University of Oklahoma School of Medicine							5	0							1	0	1	0			1	0	1	0																					49
	OREGON																																													
50	University of Oregon Medical School			1	0			10	0													1	0			1	0									1	0							2	0	50
	PENNSYLVANIA																																													
51	Hahnemann Medical Coll. and Hosp. of Phila.							1	1			3	0	2	0									2	0											2	0	11	1	1	3			1	0	51
52	Jefferson Medical College of Philadelphia													4	0	1	0	1	0																			1	0	4	0	1	0			52
53	Temple University School of Medicine			1	0			1	0			1	0	3	0			1	0			1	0															2	0							53
54	University of Pennsylvania School of Medicine	2	0					2	0			1	0	1	0	1	0	1	0	1	0			1	0			1	0	1	0	1	0			2	0	4	0			1	0			54
55	University of Pittsburgh School of Medicine																																													55
56	Woman's Medical College of Pennsylvania							2	0															1	0																			1	0			56
	SOUTH CAROLINA																																													
57	Medical College of the State of South Carolina	3	0															1	0																											57
	TENNESSEE																																													
58	Meharry Medical College																	4	0																	2	0									58
59	University of Tennessee College of Medicine			1	0									1	0			3	0																					1	0	1	0			59
60	Vanderbilt Univeresity School of Medicine	2	0																																										60
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	

P = Passed; F = Failed.

	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Hawaii and Puerto Rico	Totals	Examined—Passed	Examined—Failed	Percentage—Failed	No. Boards Examined by	Marginal Number
	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
1		1 0							5 1						1 0				2 0										71	69	2	2.8	7	1
2		1 0			1 0						1 0			2 0	2 0 1 0				1 0 1 0				2 0	1 0 2 0				90	89	1	1.1	22	2
3																							1 0						56	55	1	1.8	3	3
4												1 0											1 0						63	62	1	1.6	7	4
5		1 0																											34	34	0	0.0	3	5
6																												1 0	48	48	0	0.0	4	6
7												1 0			1 0														10	10	0	0.0	7	7
8							3 0		2 3			2 0			2 0					1 0			7 0 1 0						49	45	4	8.2	11	8
9							12 1		11 11						11 0 1 0								2 0				2 0		63	51	12	19.0	12	9
10							1 0		1 0 4 0						4 0				1 0				9 0				1 0		25	25	0	0.0	10	10
11							1 0		1 1 2 0										1 0										65	64	1	1.5	7	11
12																													43	43	0	0.0	2	12
13		1 0 1 0					3 0		1 5		1 0 9 0			2 0			1 0						3 0		3 0 1 0				129	122	7	5.4	22	13
14		8 0 1 0							4 0		1 0 2 0			5 0			2 0 1 0 1 1 2 0						4 0 1 0 9 0				1 0		159	158	1	0.6	25	14
15		3 0 1 0 1 0					1 0		4 2 2 0 3 0 1 0					2 0 1 0			2 0		1 0 3 0				2 0 1 0 6 0					118	115	3	2.5	31	15
16							1 0		1 1 1 0			1 0																34	33	1	2.9	11	16
17		2 0 1 0							2 2														2 0		3 0				171	169	2	1.2	15	17
18									0 1														1 0						111	110	1	0.9	8	18
19														1 0														1 0	61	60	1	1.6	7	19
20												1 0											1 0						74	74	0	0.0	5	20
21	3 0 2 0						2 0		5 1					1 0 2 0														1 0	93	92	1	1.1	14	21
22									4 2	1 0				1 0															77	75	2	2.6	10	22
23	26 0 1 0						1 0		2 0 3 0					1 0		1 0			3 0									2 0	130	129	1	0.8	16	23
24									3 0	1 0				5 0									1 0						64	64	0	0.0	11	24
25							1 0		1 1 8 0					7 0					1 0					3 0					100	98	2	2.0	8	25
26						2 0			1 0 1 0																				13	12	1	7.7	6	26
27							2 0		1 1 2 0			3 0			4 0				1 0 2 0					1 0 2 0				47	46	1	2.1	20	27
28						3 0									2 0 1 0														24	24	0	0.0	10	28
29									5 4			1 0			1 0								1 0 1 0						140	136	4	2.9	12	29
30									1 1																				63	62	1	1.6	4	30
31		1 0 1 0							1 1	6 0				2 0									1 0		4 0				119	118	1	0.8	14	31
32	1 0 6 4 0						1 0		1 5			1 0		2 0 3 1 1 0									1 0 1 0						100	91	9	9.0	14	32
33		7 7 0							3 1 2 0			1 0								1 0 0 1			1 0						95	93	2	2.1	12	33
34		1 0	15 0				1 0		4 2			3 1					1 0			1 0		1 0 2 0							61	58	3	4.9	15	34
35		1 0	67 0						1 0					1 0 1 0		1 0									2 1				86	85	1	1.2	12	35
36																													2	2	0	0.0	2	36
37							3 0		56 14														1 0 1 0						90	76	14	15.6	13	37
38									28 13 1 0			1 0			4 0 1 0					1 0									54	41	13	24.1	11	38
39							4 0		38 5																				49	44	5	10.2	4	39
40							3 0		11 0			3 0							1 0			1 0							23	23	0	0.0	9	40
41		1 0					2 0		74 19			1 0						1 0						1 0					105	86	19	18.1	11	41
42							1 0		25 9																				39	30	9	23.1	5	42
43									18 9						2 0														32	23	9	28.1	4	43
44							1 0		12 2	1 0		3 0			1 0				1 0										27	25	2	7.5	11	44
45									7 0						1 0				1 0			1 0							16	16	0	0.0	8	45
46											77 0													1 0				1 0	80	80	0	0.0	4	46
47							1 0				76 0																		85	84	1	1.2	9	47
48							1 0				58 0			2 0															64	64	0	0.0	6	48
49											47 0	2 0	1 0						1 0						2 0				62	62	0	0.0	10	49
50		1 0							1 0				18 0										8 0		1 0 1 0				46	46	0	0.0	12	50
51		2 0				16 0			6 9	1 0 1 0	7 0				70 10	4 0												1 0	155	131	24	15.5	17	51
52	1 0 1 0					15 0			8 3	8 0	4 0				71 0		1 0					1 0			1 0				126	123	3	2.4	16	52
53		1 0				11 0			2 6	5 0	1 0				80 2			1 0		1 0			2 0			1 0			123	115	8	6.5	17	53
54						4 0			2 4	5 0		3 0			69 0		1 0		1 0 3 0	1 0		1 0				1 0			114	110	4	3.5	24	54
55															50 2								1 0						53	51	2	3.8	2	55
56									1 2						12 0														19	17	2	10.5	5	56
57														4 0		32 0													40	40	0	0.0	4	57
58																		38 0											44	44	0	0.0	3	58
59	8 0													2 0				80 0 1 0						1 0					99	99	0	0.0	10	59
60	1 0																	52 0											55	55	0	0.0	3	60

Marginal Number	SCHOOL	1 Alabama P	F	2 Arizona P	F	3 Arkansas P	F	4 California P	F	5 Colorado P	F	6 Connecticut P	F	7 Delaware P	F	8 Dist. Columbia P	F	9 Florida P	F	10 Georgia P	F	11 Idaho P	F	12 Illinois P	F	13 Indiana P	F	14 Iowa P	F	15 Kansas P	F	16 Kentucky P	F	17 Louisiana P	F	18 Maine P	F	19 Maryland P	F	20 Massachusetts P	F	21 Michigan P	F	22 Minnesota P	F
	TEXAS																																												
61	Baylor University College of Medicine							2	0															1	0																						
62	University of Texas Faculty of Medicine																											1	0															1	0	1	0
	VERMONT																																													
63	University of Vermont College of Medicine											2	0																													1	1				
	VIRGINIA																																													
64	Medical College of Virginia																																													
65	University of Virginia Department of Medicine																	1	0																							1	0				
	WISCONSIN																																													
66	Marquette University School of Medicine							5	0			1	2					1	0					5	0	1	0											1	0			5	0	5	0
67	University of Wisconsin Medical School							4	0	1	0													4	0			1	0															2	0
	CANADA																																													
68	Dalhousie University Faculty of Medicine																																													
69	Laval University Faculty of Medicine																																					0	1								
70	McGill University Faculty of Medicine							5	2																													3	1			2	0	1	0
71	Queen's University Faculty of Medicine							1	0			1	0																																
72	University of Alberta Faculty of Medicine																																					1	0	1	0				
73	University of Manitoba Faculty of Medicine																							1	0																				
74	University of Montreal Faculty of Medicine																																					0	1						
75	University of Toronto Faculty of Medicine							2	0											1	0			1	0			1	0																
76	University of Western Ontario Medical School											1	1																															1	0	1	0
77	Foreign Medical Faculties							1	1			2	2											10	1			1	0									1	1	1	0	5	6				
78	Unapproved Schools									14	3	0	2											48	1																	79	96				
79	Totals	24	17	58	353	76	45	12	34	67	86	23	424	117	61	89	74	145	25	155	241	245	156																						
80	Totals—Examined—Passed	24	16	58	339	73	37	12	34	67	86	23	422	117	61	89	74	144	20	153	134	245	156																						
81	Totals—Examined—Failed	0	1	0	14	3	8	0	0	0	0	0	2	0	0	0	0	1	5	2	107	0	0																						
82	Percentage Failed	0.0	5.9	0.0	4.0	3.9	17.8	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.7	20.0	1.3	44.4	0.0	0.0																						
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22																						

P = Passed; F = Failed.

included California, Illinois, Massachusetts, Pennsylvania and Texas. Of the 174 osteopaths, 70 were examined in Massachusetts, 52 in New Jersey, 24 in Texas and 19 in Colorado. Other states examined fewer than 7. Of the graduates of other than recognized schools, Massachusetts examined 233 and Illinois 50. All other states examined fewer than 7. Osteopaths in Colorado, Massachusetts, New Hampshire, New Jersey and Texas were examined in medicine and surgery, those in the District of Columbia, Wisconsin and Wyoming only in surgery, while Connecticut examined 2 in medicine and surgery and 1 in medicine only.

TABLE 6.—*Graduates of Canadian Medical Schools Examined for Licensure in the United States, 1940*

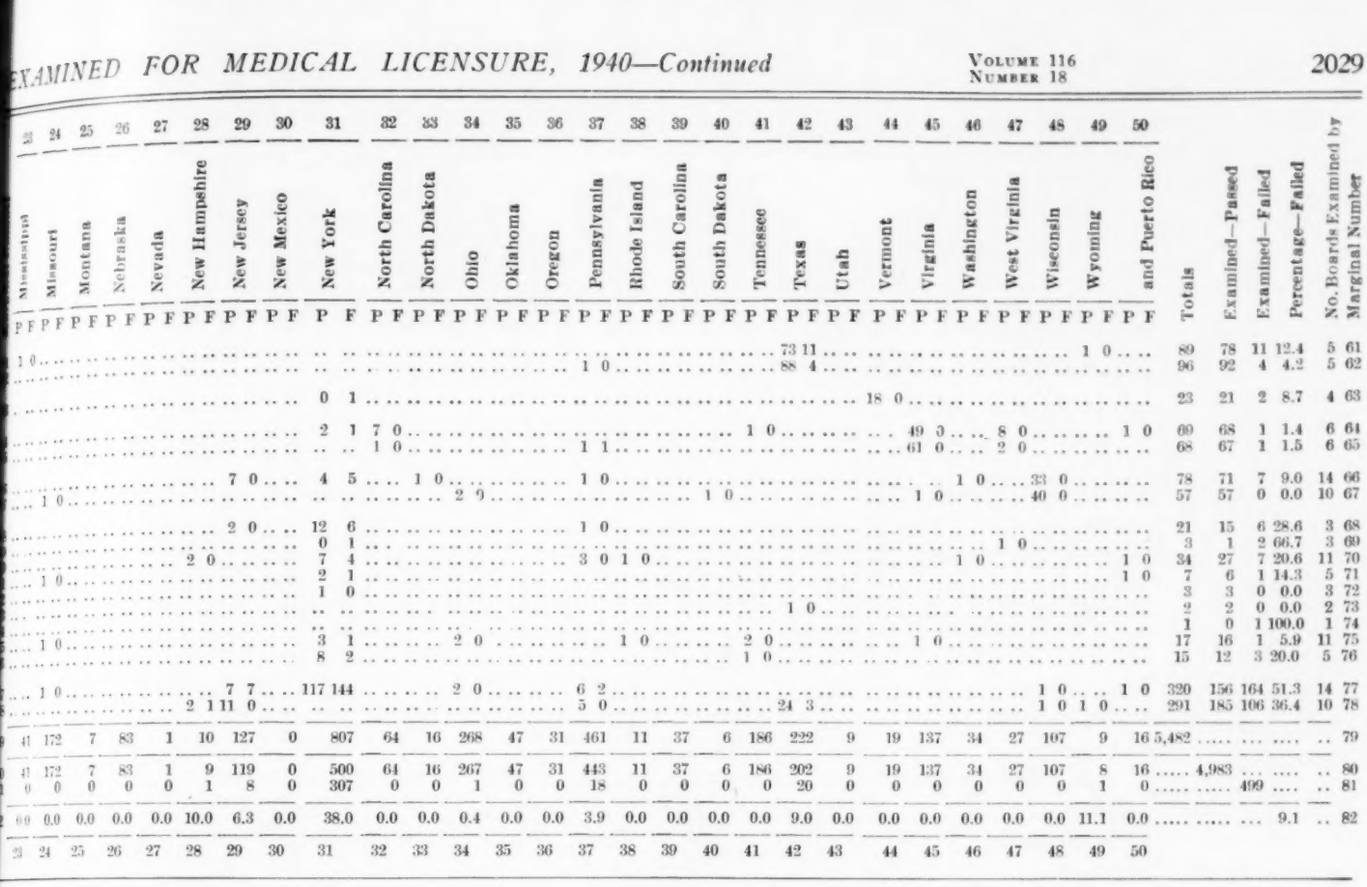
	Examined	Passed	Failed
California	19	16	3
Connecticut	5	3	2
District of Columbia	2	2	0
Georgia	1	1	0
Illinois	2	2	0
Kansas	1	1	0
Kentucky	1	1	0
Louisiana	1	1	0
Maine	10	7	3
Maryland	1	1	0
Massachusetts	8	7	1
Michigan	3	3	0
Minnesota	7	7	0
Missouri	2	2	0
New Hampshire	2	2	0
New Jersey	2	2	0
New York	71	47	24
Ohio	5	5	0
Pennsylvania	5	5	0
Rhode Island	4	4	0
South Dakota	1	1	0
Tennessee	3	3	0
Texas	1	1	0
Virginia	2	2	0
Washington	1	1	0
West Virginia	1	1	0
Hawaii	1	1	0
Puerto Rico	1	1	0
Totals	163	130	33

The 7,921 do not represent individuals, since a candidate might take the examination in more than one state and would be counted in each state. This applies to those who pass or fail, or those who fail and later pass in one or more states, or pass in one state and later in the same year fail elsewhere. However, if a candidate fails more than once in a given state within the year he is counted in that state only once as a failure.

Three of the five homeopathic boards in existence, Connecticut, Delaware and Maryland, examined 17 candidates, all of whom passed. The homeopathic boards in Arkansas and Louisiana did not examine any one during the year. The one eclectic board in existence, in Arkansas, did not examine a candidate.

The greatest number of graduates of any one school examined was 187. These were the graduates of the University of Illinois College of Medicine, who were examined in twenty states. Of those examined only 3, 1.6 per cent, failed. The next greatest number, 179, were from Northwestern University Medical School. Here again only 2, or 1.1 per cent, failed. Northwestern graduates took the test in twenty-five states. In another instance 157 graduates of the Hahnemann Medical College and Hospital of Philadelphia were examined in seventeen states. Twenty-five graduates of this school failed to pass the licensure examination, representing 15.9 per cent of those examined.

Fourteen schools in the United States had no failures before medical licensing boards, thirty-two less than 5 per cent, eight between 5 and 10 per cent and thirteen more than 10 per cent. The number examined from many of the schools having a high percentage of failures is small compared to the number of graduates annually



from these schools. This is accounted for by the fact that the majority of their graduates take the examinations of the National Board of Medical Examiners. Table 11 includes figures and percentages of all examined during 1940, i. e. those who were examined by the National Board of Medical Examiners in their final examination as well as those passing state tests.

Graduates of Rush Medical College were examined in the greatest number of states, thirty-three; graduates of the University of Pennsylvania by twenty-eight states; Harvard Medical School twenty-seven, Northwestern University twenty-five states, the College of Medical Evangelists twenty-three, Loyola University twenty-two and the University of Illinois and Johns Hopkins University in twenty states. All other schools had their graduates examined in fewer than twenty states. Graduates of Stanford University, the Universities of Southern California, Colorado and Georgia, Albany Medical College, University of Pittsburgh, Meharry Medical College, Vanderbilt and the University of Vermont were examined in less than five states. The Albany Medical College had but three of its graduates examined for licensure in two states, two were tested in Florida and one in Maine and all three passed. Graduates of four schools were examined in three states respectively.

TABLE 7.—*Source of Graduates of 1938, 1939 and 1940 Examined, 1940*

Medical Schools	Examined	Passed	Failed	Percentage Failed
Approved, in United States	4,768	4,560	208	4.4
Approved, in Canada	103	82	21	20.4
Foreign	320	156	164	51.3
Unapproved schools	291	185	106	36.4
Totals	5,482	4,983	499	9.1

The source of candidates for licensure last year are further tabulated in table 4 giving totals for five groups, namely approved medical schools in the United States and in Canada, medical schools extinct, schools in foreign countries and unrecognized institutions. Of the United States schools 5.1 per cent failed and 20.2 per cent of the graduates of Canadian schools. The greatest percentage of failures represented two groups, foreign schools and unapproved schools. In these two groups 54.7 and 44.4 per cent, respectively, failed.

One hundred and sixty-three graduates of medical schools in Canada took the test for licensure in twenty-five states, the District of Columbia, Hawaii and Puerto Rico (table 6) of whom 130 passed and 33 failed. The greatest number (60) represented McGill Uni-

TABLE 8.—*Source of Graduates of 1938, 1939 and 1940, Respectively, Examined for Medical Licensure, 1940*

	1938		1939		1940	
Medical Schools	Passed	Failed	Passed	Failed	Passed	Failed
Approved, in United States	379	23	1,065	72	3,116	113
Approved, in Canada	24	4	30	6	28	11
Foreign	83	107	67	44	6	13
Unapproved schools	29	29	55	35	101	42
Totals	515	163	1,217	157	3,251	179

TABLE 9.—*Graduates of 1938, 1939, 1940, Respectively, Examined, 1940*

Graduates of	Examined	Passed	Failed	Percentage Failed
1938	678	515	163	24.0
1939	1,374	1,217	157	11.4
1940	3,430	3,251	179	5.2
Totals	5,482	4,983	499	9.1

TABLE 10.—*Credentials Presented by Physicians for Licensure by Reciprocity and Endorsement, 1940*

Marginal Number..	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55
	Total Licensed	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	District of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Army, Navy or Public Health Service	National Board of Medical Examiners	Alaska, Hawaii, Puerto Rico	Canada & Foreign	Miscellaneous
Alabama	52	..	..	1	1	..	..	..	..	..	4	..	1	..	..	..	1	10	..	2	..	1	3	1	2	..	..	..	..	..	..	3	..	..	3	1	..	4	..	2	..	9	1	..	..	1	..	..	..	..	..	1	..	..	..
Arizona	15	..	..	..	1	..	..	..	..	..	..	..	1	..	1	..	..	2	..	..	..	1	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Arkansas	26	..	..	..	1	..	..	..	..	..	..	..	1	..	..	2	1	3	..	2	..	..	1	1	2	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	2	..	..	..
California	212	1	2	1	..	6	..	1	2	..	1	1	17	6	6	8	1	..	1	4	2	9	16	1	9	..	12	..	..	..	..	19	..	1	12	1	7	7	..	..	3	5	2	2	..	1	4	..	5	..	5	30	1	..	..
Colorado	17	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	3	..	1	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	5	..	..	..
Connecticut	67	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..	..	2	1	6	..	1	1	..	..	..	1	..	..	..	..	15	..	..	..	..	..	2	..	..	..	1	1	..	..	..	1	..	..	..	..	31	..	..	..
Delaware	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	..	..	..	..	2	..	1	1	..	..	..	3	..	1	1	..	..	29	1	..	..
Dist. Columbia	55	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	1	..	..	8	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Florida	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Georgia	35	1	..	..	..	..	..	..	1	..	..	..	..	2	1	1	1	5	1	3	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Idaho	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	1	..	5	3	..	..	1	..	..	..	..	2	..	..	..
Illinois	148	..	..	1	2	1	..	..	..	..	..	..	..	4	10	2	3	2	..	3	..	7	6	..	33	..	10	..	..	1	..	..	..	..	7	..	..	6	..	..	..	1	5	..	..	3	..	1	7	..	33	..	..	..
Indiana	72	..	..	2	5	..	..	..	..	..	1	..	14	..	..	1	7	..	1	2	..	5	..	..	6	..	3	..	..	..	..	3	..	..	8	..	..	4	..	..	..	1	1	..	..	1	..	1	3	..	3	..	..	..
Iowa	82	..	..	1	..	2	..	..	..	..	..	..	8	3	..	2	1	2	..	3	..	7	4	..	7	..	16	..	..	..	..	3	1	1	4	2	..	1	..	..	..	1	..	..	..	1	..	..	..	..	12	..	..	..
Kansas	19	..	..	..	1	1	..	..	..	..	..	..	1	..	1	..	..	..	..	1	..	1	..	1	4	..	..	..	..	1	..	..	..	1	2	..	..	1	..	1	..	1	1	..	..	..	..	..	1	..	..	..	..	..
Kentucky	49	..	..	..	1	..	1	..	..	..	1	..	4	2	..	1	..	1	2	2	..	1	1	..	1	..	..	..	..	1	1	2	1	..	7	1	..	..	..	..	..	11	2	..	..	1	..	..	..	..	1	3	..	..	..
Louisiana	26	..	..	6	..	..	..	..	..	..	1	..	2	..	1	..	..	..	..	..	..	1	1	1	3	..	..	..	..	..	1	..	..	..	2	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..	..	..	..	..
Maine	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryland	48	1	..	..	..	..	..	..	..	..	1	..	1	..	1	..	..	1	..	..	..	2	..	..	..	..	2	..	..	..	..	2	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	7	..	..	..
Massachusetts	113	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..	..	..	..	2	..	..	..	..	7	2	..	2	1	..	1	..	..	..	1	2	..	..	..	1	..	..	..	..	20	..	..	..
Michigan	137	..	1	1	9	3	1	..	..	..	3	..	9	8	4	6	2	1	3	4	..	..	8	..	8	3	9	..	..	1	..	4	1	1	23	..	1	3	..	..	..	7	1	1	..	2	..	..	3	..	113	..	..	..
Minnesota	29	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	2	1	7	..	..	..	..	1	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	6	..	..	..
Mississippi	33	..	..	1	..	..	..	..	..	..	2	..	..	..	1	1	..	7	..	..	..	..	..	..	1	..	..	..	..	..	..	1	1	..	1	1	..	..	..	..	..	..	13	..	..	..	..	..	..	1	..	9	..	..	..
Missouri	79	..	..	5	1	..	..	..	..	..	..	..	6	2	1	21	4	1	..	2	..	1	3	..	..	..	2	..	..	..	..	5	..	..	3	1	..	..	..	..	..	10	..	..	..	..	..	..	1	1	..	2	..	..	..
Montana	27	..	1	..	2	1	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	2	5	..	3	..	5	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	1	2	..	8	..	..	..
Nebraska	15	..	..	..	1	..	..	..	..	..	..	..	2	..	1	1	..	1	..	..	..	3	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	..	..	..
Nevada	11	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	1	..	..	..	1	..	..	..
New Hampshire	36	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	2	..	6	1	..	..	..	..	..	..	..	..	..	6	..	..	1	..	..	..	2	..	..	..	1	1	..	..	..	..	..	..	..	1	..	..	..
New Jersey	164	..	..	1	..	..	2	..	..	..	2	..	6	..	1	..	2	3	2	9	..	7	2	1	3	..	..	..	1	..	..	7	2	..	1	1	..	..	..	..	..	1	6	..	..	..	..	..	..	..	13	..	1	..
New Mexico	46	..	..	..	1	2	..	..	..	..	..	..	4	..	3	1	..	4	..	1	1	1	1	..	1	..	5	..	..	..	..	53	..	..	16	..	..	18	..	..	..	2	..	..	3	5	..	1	2	..	22	..	..	..
New York	334	..	..	..	4	3	2	1	1	..	3	..	1	2	2	2	..	1	..	22	..	5	4	..	1	..	4	..	..	15	..	..	3	..	19	1	..	12	..	2	..	12	5	..	2	5	..	..	1	1	..	3	..	..	..
North Carolina	80	1	..	1	2	..	1	..	1	..	3	..	1	1	1	..	1	2	..	2	..	..	1	1	2	..	..	..	..	..	..	4	..	..	1	..	..	3	1	3	..	15	..	..	..	10	..	2	..	..	1	19	..	..	..
North Dakota	11	..	..	1	..	..	..	..	..	..	1	..	1	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	4	..	..	..
Ohio	136	1	1	3	..	3	1	..	..	..	..	..	2	4	5	4	9	..	2	1	2	13	2	..	28	..	5	..	..	2	..	12	1	..	..	1	1	10	..	..	..	7	..	..	..	3	..	1	3	..	9	..	..	..
Oklahoma	36	..	..	3	1	1	..	..	..	..	..	..	1	1	..	3	..	2	..	..	..	..	..	2	2	..	..	..	..	..	..	..	..	2	1	..	..	1	..	..	..	8	3	..	..	1	..	..	1	..	3	..	..	..
Oregon	22	..	1	..	3	..	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	1	3	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Pennsylvania	84	..	..	..	2	1	2	..	..	1	..	1	3	..	1	..	1	..	1	5	1	7	3	..	..	..	1	..	..	6	..	7	..	..	2	..	..	..	1	..	..	4	1	..	..	..	..	..	1	..	6	..	..	..
Rhode Island	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	..	..	32	..	..	..
South Carolina	17	1	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..
South Dakota	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	2	1	..	1	..	..	..	1	..	..	..	..	1	..	..	..	..	2	..	..	..
Tennessee	41	..	..	..	1	..	..	..	..	..	4	..	1	..	1	..	4	2	..	6	..	..	1	1	1	..	..	..	..	1	..	3	1	..	3	..	..	4	..	..	..	..	2	..	..	3	..	..	..	..	2	..	..	..
Texas	145	2	1	9	3	3	..	..	..	..	1	..	11	2	2	4	1	16	1	2	1	9	6	..	7	1	5	..	1	2	..	11	1	..	8	9	..	6	..	..	..	11	..	..	..	2	1	3	..	..	2	..	1	..	..
Utah	17	..	..	..	1	2	..	..	..	..	..	..	2	..	..	..	2	1	..	..	..	..	..	..	3	1	1	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..
Vermont	22	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	2	..	..	..	..	..	..	2	..	..	..	..	1	..	..	..	..	..	9	..	..	..	..	..	..	..	..	2	..	..	..
Virginia	80	..	..	1	..	..	1	10	..	..	..	..	..	1	3	1	..	1	1	9	..	..	1	..	1	1	..	..	..	3	..	8	6	..	2	..	2	..	1	..	9	..	..	..	..	..	1	..	..	14	..	..	..
Washington	47	..	..	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	8	..	5	..	7	..	..	..	..	..	..	..	..	..	1	3	..	..	1	..	..	..	..	..	..	2	..	..	2	14	..	..	..
West Virginia	50	..	..	1	..	..	..	..	1	..	1	..	..	1	1	1	3	..	..	4	..	2	2	..	2	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	11	..	..	..
Wisconsin	46	..	..	1	1	..	..	..	..	..	..	..	18	1	2	..	..	..	..	3	..	2	4	..	4	..	2	..	..	..	1	..	..	..	4	..	..	4	..	..	..	8	..	..	..	5	..	..	1	..	6	..	..	..
Wyoming	6	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	1	1	..	..	..	..	..	..	..	..	1	..	..	..
Alaska, Hawaii Puerto Rico, Virgin Islands	18	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..
Totals	2,834	8	7	39	57	29	11	4	16	1	31	2	125	42	56	64	46	71	20	107	13	95	94	11	147	7	105	0	5	36	2	180	31	7	141	26	15	99	4	11	8	158	48	7	5	52	10	16	41	2	12	696	4	4	6
Marginal Number..	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55

TABLE 11.—*Consolidated Examinations, State Medical Examining Boards and the National Board of Medical Examiners, 1940*

Medical School	Examined by Medical Examining Boards		Part III of Examination of National Board of Medical Examiners		Totals		
	P	F	P	F	P	F	% F
Univ. of Arkansas	69	2	4	0	73	2	2.7
Coll. of Medical Evangelists	93	1	88	2	181	3	1.6
Stanford Univ.	56	1	1	0	57	1	1.7
Univ. of California	63	1	2	0	65	1	1.5
Univ. of Southern California	36	0	..	..	36	0	0.0
Univ. of Colorado	48	0	10	0	58	0	0.0
Yale Univ.	13	0	33	0	46	0	0.0
George Washington Univ.	51	5	9	0	60	5	7.7
Georgetown Univ.	62	16	26	1	88	17	16.2
Howard Univ.	29	1	2	0	31	1	3.1
Emory Univ.	67	1	1	0	68	1	1.4
Univ. of Georgia	46	0	..	..	46	0	0.0
Loyola Univ.	123	7	4	0	127	7	5.2
Northwestern Univ.	177	2	28	0	205	2	1.0
Rush Med. Coll.	136	6	11	0	147	6	3.9
Univ. of Chicago, Sch. of Med.	38	2	11	0	49	2	3.9
Univ. of Illinois	184	3	2	0	186	3	1.6
Indiana Univ.	115	1	4	0	119	1	0.8
State Univ. of Iowa	63	3	..	..	63	3	4.5
Univ. of Kansas	80	1	..	..	80	1	1.2
Univ. of Louisville	93	1	1	0	94	1	1.1
Louisiana State Univ.	77	2	..	..	77	2	2.5
Tulane Univ. of Louisiana	139	1	2	0	141	1	0.7
Johns Hopkins Univ.	83	2	8	0	91	2	2.1
Univ. of Maryland	102	3	2	0	104	3	2.8
Boston Univ.	13	3	37	1	50	4	7.4
Harvard Medical School	84	3	63	0	147	3	2.0
Tufts College	35	4	76	4	111	8	6.7
Univ. of Michigan	146	6	2	0	148	6	3.9
Wayne Univ.	63	1	..	..	63	1	1.6
Univ. of Minnesota	132	1	11	0	143	1	0.7
St. Louis Univ.	96	12	16	1	112	13	10.4
Washington Univ.	100	4	4	0	104	4	3.7
Creighton Univ.	62	5	3	0	65	5	7.1
Univ. of Nebraska	91	4	..	..	91	4	4.2
Albany Medical College	3	0	17	0	20	0	0.0
Columbia Univ.	93	18	11	0	104	18	14.8
Cornell Univ.	48	13	22	0	70	13	15.7
Long Island College	48	5	16	0	64	5	7.2
New York Medical College	23	0	51	5	74	5	6.3
New York Univ.	92	21	16	0	108	21	16.3
Syracuse Univ.	31	9	4	0	35	9	20.5
Univ. of Buffalo	26	10	37	0	63	10	13.7
Univ. of Rochester	27	3	..	..	27	3	10.0
Duke Univ.	18	0	46	2	64	2	3.0
Ohio State Univ.	82	1	..	..	82	1	1.2
Univ. of Cincinnati	87	1	3	0	90	1	1.1
Western Reserve Univ.	66	0	..	..	66	0	0.0
Univ. of Oklahoma	63	0	5	0	68	0	0.0
Univ. of Oregon	54	0	4	0	58	0	0.0
Hahnemann Medical College	132	25	..	..	132	25	15.9
Jefferson Medical College	130	5	4	0	134	5	3.6
Temple Univ.	119	8	..	..	119	8	6.3
Univ. of Pennsylvania	126	4	5	0	131	4	3.0
Univ. of Pittsburgh	52	2	1	0	53	2	3.6
Woman's Medical College	20	3	7	1	27	4	12.9
Med. Coll. of South Carolina	41	0	1	0	42	0	0.0
Meharry Medical College	45	1	2	0	47	1	2.1
Univ. of Tennessee	104	0	2	0	106	0	0.0
Vanderbilt Univ.	56	0	..	..	56	0	0.0
Baylor Univ.	79	11	..	..	79	11	12.2
Univ. of Texas	99	4	..	..	99	4	3.9
Univ. of Vermont	21	2	13	1	34	3	8.1
Medical College of Virginia	72	2	..	..	72	2	2.7
Univ. of Virginia	69	2	1	0	70	2	2.8
Marquette Univ.	71	7	4	0	75	7	8.5
Univ. of Wisconsin	64	0	..	..	64	0	0.0
Totals: U. S. schools	4,926	262	733	18	5,659	280	4.7
Dalhousie Univ.	16	6	..	..	16	6	27.3
Laval Univ.	1	3	..	..	1	3	75.0
McGill Univ.	49	11	11	0	60	11	15.5
Queen's Univ.	12	3	..	..	12	3	20.0
Univ. of Alberta	3	1	..	..	3	1	25.0
Univ. of Manitoba	5	1	1	0	6	1	14.3
Univ. of Montreal	1	3	..	..	1	3	75.0
Univ. of Toronto	30	2	..	..	30	2	6.2
Univ. of Western Ontario	13	3	1	0	14	3	17.7
Totals: Canadian schools	130	33	13	0	143	33	18.8
Foreign Medical Faculties	948	1,144	24	3	972	1,147	54.1
Extinct Medical Schools	5	0	..	..	5	0	0.0
Unapproved Schools	273	200	..	..	273	200	44.4
Totals	6,282	1,639	770	21	7,052	1,660	19.1

P = Passed; F = Failed.

versity Faculty of Medicine, who were examined in fifteen states; 32 graduates of the University of Toronto Faculty of Medicine in seventeen states, while 22 from Dalhousie University Faculty of Medicine applied for licensure in three states. The highest percentage of failures was 75, representing 4 graduates examined from each of two schools, Laval University Faculty of Medicine and the University of Montreal Faculty of Medicine. Of these, one passed and three failed. The state of New York examined 71 of the 163 Canadian graduates, California examined 19 and Maine 10. All other states fewer than 10, and in nineteen states fewer than 5.

Further perusal of table 2 reveals that 5 graduates of medical schools now extinct were examined in four states, Florida, Iowa, Louisiana and West Virginia. None of these examinees failed.

TABLE 12.—*Failures Before Medical Licensing Boards by Licentiates, 1940*

	Licenses Issued by Examination, Reciprocity or Endorsement	Licensed After One Failure		Licensed After Two or More Failures		
		Failed in State Where Licensed	Elsewhere	Failed in State Where Licensed	Elsewhere	Failed in State Where Licensed and Elsewhere
Alabama	62	..	4	..	..	..
Arizona	36	1	1	..	..	..
Arkansas	84	..	..	..	..	..
California	608	18	6	3	4	1
Colorado	92	1	..	..	..	..
Connecticut	125	12	2	4	..	4
Delaware	16	..	..	..	..	..
Dist. of Columbia	104	..	1	..	..	..
Florida	131	2	..	1	1	2
Georgia	123	..	1	..	..	..
Idaho	40	..	..	..	..	..
Illinois	690	5	4	..	..	..
Indiana	191	..	..	..	..	..
Iowa	180	2	..	..	1	..
Kansas	111	..	..	..	..	..
Kentucky	131	..	1	..	..	..
Louisiana	185	..	..	..	..	..
Maine	47	2	1	..	..	..
Maryland	223	2	4	..	1	..
Massachusetts	451	30	30	63	19	7
Michigan	340	..	4	..	1	..
Minnesota	225	..	..	..	..	..
Mississippi	75	..	..	..	..	..
Missouri	258	1	2	..	1	..
Montana	36	..	..	..	..	..
Nebraska	99	..	1	..	..	..
Nevada	14	..	..	..	..	..
New Hampshire	50	..	..	..	..	..
New Jersey	343	6	5	8	4	9
New Mexico	46	..	..	..	1	..
New York	1,290	177	5	155	3	18
North Carolina	145	..	1	..	..	..
North Dakota	35	..	..	..	..	..
Ohio	444	7	8	3	5	3
Oklahoma	81	..	..	..	..	..
Oregon	56	..	..	..	..	..
Pennsylvania	561	2	1	..	1	..
Rhode Island	24	..	..	..	..	..
South Carolina	58	..	..	..	..	..
South Dakota	15	..	..	..	..	..
Tennessee	238	1	1	..	1	..
Texas	355	14	1	1	..	..
Utah	23	..	..	..	..	..
Vermont	42	1	3	..	1	..
Virginia	222	..	1	..	..	..
Washington	95	..	..	..	..	..
West Virginia	88	..	..	..	..	..
Wisconsin	159	..	..	..	..	..
Wyoming	22	1	1	..	..	..
Puerto Rico	46	..	..	1	..	1
Totals	9,115	285	89	239	44	45

Twenty-two states examined 2,092 graduates of medical schools other than those in the United States and Canada. They were also tested in Puerto Rico. In 1940 also 473 unapproved graduates were examined in eleven states, namely California, Colorado, Connecticut, Illinois, Massachusetts, New Hampshire, New Jersey, Pennsylvania, Texas, Wisconsin and Wyoming, and in the District of Columbia and Puerto Rico.

In 1939, 7,750 were examined, of whom 6,489 passed and 1,261, or 16.3 per cent, failed, as compared with 7,921 examined in 1940, of whom 6,282 passed and 1,639, or 20.7 per cent, failed. Elsewhere are given figures referring to actual licentiates and additions to the medical profession.

GRADUATES OF 1938, 1939 AND 1940 EXAMINED FOR MEDICAL LICENSURE, 1940

In table 5 are presented figures recording graduates of 1938, 1939 and 1940 examined for medical licensure in 1940. Altogether 5,482 were examined, of whom 4,983 passed and 499, or 9.1 per cent, failed. Represented were 4,768 graduates of sixty-seven approved medical schools in the United States, of whom 4,560 passed and 208, or 4.4 per cent, failed. From the nine approved medical schools in Canada which offer the complete medical course, 103 were examined, 82 of whom passed and 21, or 20.4 per cent, failed. There were 320 recent graduates of medical schools other than in the United States and Canada examined of whom 156 passed and 164, or 51.3 per cent, failed. There were also examined 291 graduates of schools not approved by the American Medical Association and graduates of schools of osteopathy, of whom 185 passed and 106, or 36.4 per cent, failed. These figures will be found in table 8.

Of the graduate schools in the United States 4.4 per cent failed, while among the graduates of Canadian schools 20.4 per cent, those holding diplomas from schools other than the United States and

TABLE 13.—*Reciprocity and*

Compilation of data furnished by state examining boards. This information is not guaranteed, as there may have been

Marginal Number	The Examining Board of	Reciprocates with, or Endorses Certificates Granted by: Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	Marginal Number
1	Alabama	..	..	+	+	+	..	+	+	+	+	..	+	+	+	+	+	+	+	+	..	+	+	+	+	+	+	+	..	+	+	1
2	Arizona	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2
3	Arkansas (regular board)	+	+	..	+	+	..	..	+	..	+	..	+	+	+	+	+	+	+	+	+	+	+	+	+	+	..	+	+	+	+	3
4	California	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4
5	Colorado	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5
6	Connecticut (regular board)	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6
7	Delaware (regular board)	No reciprocity or endorsement policies											..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	7
8	District of Columbia												..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8
9	Florida	No reciprocity or endorsement policies											..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9
10	Georgia	+	..	+	+	+	..	..	+	..	..	..	..	+	+	+	+	+	+	+	..	+	+	+	+	..	+	+	+	+	+	10
11	Idaho	No reciprocity or endorsement policies											..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11
12	Illinois	+	..	+	+	+	..	..	..	..	+	..	..	+	+	+	+	+	+	..	+	+	+	+	+	..	+	+	..	+	+	12
13	Indiana	+	..	+	+	+	..	..	+	..	+	..	+[32]	..	+	+	+	+	+	..	..	..	+	+	..	+	+	+	+	+	+	13
14	Iowa	+	..	+	+	+	..	+	+	..	+	..	+	+	..	+	+	+	+	..	+	..	+	+	+	+	+	+	+	+	+	14
15	Kansas	+	+	+[19]	+	+	..	+	+	..	+	..	+	+	+	..	+	+	+	..	+	..	+	..	+	+	+	+	+	+	+	15
16	Kentucky	+	..	+	+	+	..	+	+	..	+	..	+	+	+	+	..	+	..	+	..	+	+	+	..	+	+	+	+	+	+	16
17	Louisiana (regular board)	+	+	+	+	+	..	+	+	..	+	..	+	+	+	+	+	..	+	+	..	+	+	+	+	..	+	+	+	+	+	17
18	Maine	..	..	+	+	+	..	+	+	..	+	..	+	+	+	+	+	..	+	+	..	+	+	..	+	+	+	+	+	..	+	+	18
19	Maryland (regular board)	+	..	+	+	..	..	+	+	..	+	..	+	+	+	+	+	+	..	..	+	+	+	+	+	+	+	+	+	+	+	+	19
20	Massachusetts	No reciprocal relations											..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	20
21	Michigan	+	+	+	+	+	+	+	+	..	+	..	+	+	+	+	+	+	+	+	..	..	+	+	+	+	+	+	+	+	+	21
22	Minnesota	+	..	+	+	..	..	+	..	..	+	..	+	..	+	..	+	+	+	+	..	+	..	+	+	+	+	+	+	+	+	22
23	Mississippi	+	+	+	+	+	+	+	+	..	+	..	+	+	+	+	+	+	+	+	..	+	+	+	+	+	+	+	+	+	+	23
24	Missouri	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	24
25	Montana	+	+	+	+	+	..	+	+	..	..	..	..	+	+	+	+	..	+	+	..	+	+	+	+	..	+	+	+	..	+	25
26	Nebraska	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26
27	Nevada	..	..	+[21]	+	+	..	..	..	..	+	..	+	+	+	+	+	+	+	+	..	+	+	+	..	+	+	+	..	..	..	..	27
28	New Hampshire	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28
29	New Jersey	+	..	..	+	+	..	..	+	..	+	..	+	+	+	+	+	+	+	+	..	+	+	..	..	..	+	..	+	..	..	..	29
30	New Mexico	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30
31	New York	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	31
32	North Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32
33	North Dakota	+	..	+	+	+	..	..	..	..	+	..	+	+	+	+	+	+	+	..	..	+	..	..	+	+	+	+	+	+	+	33
34	Ohio	+	+	+	+	+	+	+	+	..	+	..	+	+	+	+	+	+	+	..	..	+	..	+	+	+	+	+	+	+	+	34
35	Oklahoma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	35
36	Oregon	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	36
37	Pennsylvania	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	37
38	Rhode Island	No reciprocal relations											..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	38
39	South Carolina	+	..	..	..	..	..	..	..	..	+	..	..	..	..	+	+	+	+	..	..	..	..	..	..	..	..	..	..	+	+	..	39
40	South Dakota	+	+	+	+	+	..	..	..	..	+	..	..	+	+	+	+	+	..	..	..	+	+	+	..	+	+	..	..	..	+	..	40
41	Tennessee	+	+	+	+	+	+	+	+	..	+	..	+	+	+	+	+	+	+	+	..	+	+	+	+	+	+	..	+	+	+	..	41
42	Texas	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	42
43	Utah	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	43
44	Vermont	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44
45	Virginia	+	..	+	+	..	..	+	+	..	+	..	..	+	+	+	+	+	+	+	..	+	+	+	..	+	..	..	+	+	+	45
46	Washington	+	..	..	+	+	..	..	..	..	+	..	..	..	+	..	+	..	+	..	..	+	+	+	+	+	+	..	..	..	..	..	46
47	West Virginia	+	..	+	..	..	..	+	+	..	+	..	+	+	+	+	+	..	+	..	+	+	+	+	+	+	+	..	+	..	..	47
48	Wisconsin	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	48
49	Wyoming	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49
50	Alaska	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	50
51	Hawaii	No reciprocal relations											..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51
52	Puerto Rico	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	52

Some states have additional requirements for graduates of schools outside the United States and Canada.

1. 1st P, first papers required; +, full citizenship required.
2. In most cases there is a small additional recording or registration fee.
3. If state of original license grants similar privileges.
4. Internship accepted in lieu of one year's practice.
5. Professional practice required.
6. No professional practice required.
7. Just preceding application.
8. No basic science reciprocity—examination must be within the state.
9. Basic science certificate required either by reciprocity or examination in addition to basic science subjects of National Board.
10. Reserve officers not eligible.
11. Applicant's diplomate certificate must be dated not less than one year or more than ten years prior to the filing date in California of an application; applicant must also have been a resident of some state or territory of the United States for a period of at least one year after the date of his diplomate certificate.
12. Oral examination required when original license is ten or more years old.
13. Applicant must have resided in the state used as basis of application for one year after date on said certificate.
14. Oral examination required.
15. Unless in practice in another state for five years.
16. Actual practice for a period of three years immediately preceding date of application.
17. Practical, clinical examination required.
19. Regular and Homeopathic boards.
20. Graduates of foreign medical schools accepted if they present also a diploma from an approved medical school in the United States.
21. Regular board.
22. Fee same as applicant's state charges if more than $50.
23. Oral examination required if applicant's state requires it.

Canada 51.3 per cent and unapproved schools 36.4 per cent.

Twenty schools in the United States had no failures among recent graduates applying for licensure, twenty-nine schools had less than 5 per cent and eighteen more than 5 ranging to 28.1 per cent.

licensing boards in twenty-five states. Thirty-four graduates of McGill University Faculty of Medicine, the greatest number from any one Canadian school, were tested in eleven states, while only one from the Faculty of Medicine of the University of Montreal appeared for registration. Only 10 medical graduates

Endorsement Policies

changes of which this office has not been advised. For an authentic statement write directly to the medical board.

Marginal Number	Reciprocates with, or Endorses Certificates Granted by: New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Alaska	Puerto Rico	At the Discretion of the Board	National Board of Medical Examiners	U. S. Government Services	Requirements: Basic Science Certificate	Internship	Professional Practice	Citizenship [1]	Fees, Dollars [2]	Miscellaneous	Marginal Number
1	+	+	+	+	+	+	+	..	+	+	+	+	..	+	+	+	+	+	+	..	..	+[3]	+	+	..	+	1[4]	+[45]	50	..	1
2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	+[5,6]	+[6]	..	3[4,7]	..	100	42	2
3	+	+	+	+	+	..	+	..	+	+	+	+	..	+	+	..	+	+	..	..	..	..	+[9]	..	+	..	1[4]	+	50[30]	42	3
4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+[12]	+[11,12,43]	+[10]	..	41	1[13]	..	100	43	4
5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+[9]	10	+	..	1[4]	1st P	50	42	5
6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+[14,44]	+[14,36]	..	+[15]	..	3[4,16]	1st P	50	..	6
7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+[5]	+	..	+	2	+	100	..	7
8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+[3]	+[36]	+[5]	+	+	27	..	50	..	8
9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9
10	..	+	+	+	+	+	+	..	+	+	+	+	+	+	+	+	+	+	..	..	..	..	+	..	..	..	0	+	50	..	10
11	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11
12	..	..	+	+	+	+	+	..	..	..	+	+	+	+	+	..	+	+	+	..	..	..	+[17]	+[10,17]	..	+	1[4]	1st P	25	17.42	12
13	+	+	+	+	+	+	+	..	..	+	+	+	+	+	+	..	+	+	+	..	..	..	+	..	..	..	1[4]	+[33]	50	..	13
14	+	+	+	+	+	..	+	..	..	+	+	..	+	..	+	+	+	+	+	..	..	..	+	..	..	+	1[4]	+[45]	50	..	14
15	..	+	+	+	+	..	+	..	+	+	+	+	+	+	+	..	+	+	+	..	..	..	+	..	..	..	1[4,7]	+	50	42	15
16	..	..	..	..	..	..	..	..	+	+	+	+	+	..	+	+	+	+	..	..	..	..	+	..	..	..	1[4]	+	50	42	16
17	+	+	+	+	+	+	+	..	+	+	+	+	+	+	+	+	+	+	+	..	..	..	..	..	..	+	1[4]	1st P[40,46]	50	20	17
18	..	..	+	+	+	+	+	..	+	..	+	+	+	+	+	..	+	+	+	..	..	..	+[14]	..	..	[35]	1[4]	1st P[45]	52	..	18
19	..	+	..	+	+	+	+	..	+	..	+	+	..	+	+	..	+	+	+	..	..	+	+	..	..	..	1[4]	1st P	50	42	19
20	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	0	1st P	25	..	20
21	..	+	+	+	+	+	+	..	+	+	+	+	+	+	+	+	+	+	+	..	..	..	+[35]	..	+[37]	+	1[4]	+	50	34	21
22	..	+	..	..	+	+	+	..	..	+	+	+	+	+	+	+	+	+	+	..	..	..	+	..	+	..	0	+[45]	75	17.42	22
23	+	+	+	+	+	+	+	..	+	+	+	+	+	+	+	+	+	+	+	..	..	..	+	..	..	..	..	+[45]	50	42	23
24	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+[47]	..	..	+[33]	1[4]	+[45]	50	..	24
25	..	+	+	+	+	..	+	..	+	..	+	+	..	+	+	+	+	+	+	..	+	..	+[14]	..	..	..	1[4]	+	75	..	25
26	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+[39]	..	+	..	1[4]	+	50	..	26
27	+	..	..	+	+	+	+	..	..	+	+	..	+	+	..	..	+	+	..	+	..	..	+	..	..	..	1[4]	+	100	14.42	27
28	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	..	+	..	0	+[45]	20	42	28
29	+	..	+	+	+	..	+	..	..	..	+	+	+	+	..	+	+	..	..	..	..	+	+	..	..	+	0	+	100	..	29
30	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	+	..	..	1[4]	1st P	50	42	30
31	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	..	..	..	2	1st P	25	..	31
32	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	+	..	..	0	+	50	42	32
33	..	+	..	+	+	+	+	..	..	+	..	+	+	+	+	+	+	+	+	..	..	..	+	..	..	+	1	+[45]	50[22]	14.42	33
34	..	..	+	..	+	+	+	..	+	+	+	+	+	+	..	+	+	+	+	..	..	+	+	..	..	..	1[4]	+	50	23	34
35	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	..	+	+	1[4]	+	100	42	35
36	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+[9,36]	..	+	+	1[4]	..	100	..	36
37	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	+	..	+	2[24]	1st P	100	42	37
38	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+[14]	..	+	+	0	1st P	20	..	38
39	..	..	..	+	..	..	+	..	..	..	+	+	..	..	+	..	+	..	+	..	..	..	+	..	..	..	1[4]	+	50	42	39
40	..	..	+	+	+	+	..	..	+	..	+	+	..	+	+	+	+	+	+	..	..	..	+	..	+	+	1	1st P	50	42	40
41	+	+	..	+	+	..	+	..	+	+	..	+	+	..	+	+	+	+	+	..	..	..	+	+	..	..	0	..	10	42	41
42	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	+	..	..	1[25]	+	50	31	42
43	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+	+	..	+	4[8]	+[45]	50	42	43
44	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+[38]	..	..	+	0	+	50	..	44
45	+	+	..	+	+	..	+	..	+	+	+	+	..	+	..	+	+	+	+	..	..	+	+	+	..	..	2[26]	+[45]	50	..	45
46	..	..	..	..	+	+	+	..	..	+	+	+	+	+	+	..	..	+	..	+	..	..	+[8]	..	+[8]	+	0	1st P	25	42	46
47	..	+[27]	+	+	+	..	+	..	+	+	+	+	+	+	..	..	+[28]	+	..	+	..	..	+	..	..	+	2[4]	+	100	42	47
48	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+[14]	..	+	+	+	1[29]	1st P	50[22]	42	48
49	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+[14]	+[14]	+	..	+	0	+	50	..	49
50	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	..	..	..	..	..	+	..	..	+	0	+	100	..	50
51	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+[14]	..	..	+	..	+	25	42	51
52	+	..	..	..	..	+	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	+	+[39]	..	+	0	+	25	..	52

24. If an applicant passes the examination in the state from which he transfers after the completion of his internship, no practice is required.
25. Internship accepted if served in this state.
26. Internship accepted—considered equivalent to two years' practice.
27. Five years' practice.
28. Conditionally.
29. A two year internship is accepted.
30. License by National Board certificate at examination fee of $15 unless holding a license from another state.
31. Graduates before 1907 required to take oral examination.
32. Clinical examination required.
33. Reciprocity applicants only.
34. Supplemental examination required in certain cases when accepting the examination of a state with whom reciprocal relations have not been established.
35. May be licensed after a special (written) supplemental examination.
36. Fee for license on basis of National Board certificate $25.
37. For matriculants after Oct. 17, 1937.
38. Fee, $20.
39. While on active duty only.
40. Permanent license withheld until completion of citizenship.
41. Graduates of foreign medical schools effective Sept. 15, 1935. Canadian schools exempted effective Sept. 19, 1939.
42. Graduates of foreign medical schools are not accepted.
43. Graduates of foreign medical schools must have fulfilled all requirements of California prior to admittance to examination for any certificate used as basis of application to California.
44. A New York license not acceptable.
45. Not applicable to citizens of Canada.
46. Canadian citizens are required to file first papers.
47. Fee, $15.
48. Same as required of Utah candidates applying for licensure.

The greatest number examined by any one state was New York, 807; Pennsylvania was second with 461; Illinois 424, California 353 and Ohio 268.

More than 100 from each of thirteen schools were examined, the highest being 159 graduates of Northwestern University Medical School who appeared before

of Yale University were examined in seven states and 16 from Duke University School of Medicine were examined in eight states. Very few also from Boston University School of Medicine, Tufts College Medical School, Albany Medical College and the New York

(CONTINUED ON PAGE 2036)

TABLE 14.—*Candidates Licensed by Reciprocity and Endorsement, 1940*

Marginal Number	SCHOOL	1 Alabama	2 Arizona	3 Arkansas	4 California	5 Colorado	6 Connecticut	7 Delaware	8 District of Columbia	9 Florida	10 Georgia	11 Idaho	12 Illinois	13 Indiana	14 Iowa	15 Kansas	16 Kentucky	17 Louisiana	18 Maine	19 Maryland	20 Massachusetts	21 Michigan	22 Minnesota	23 Mississippi	24 Missouri	25 Montana	26 Nebraska	27 Nevada	28 New Hampshire	29 New Jersey	30 New Mexico	31 New York	32 North Carolina	33 North Dakota	34 Ohio	35 Oklahoma	36 Oregon	37 Pennsylvania	38 Rhode Island	39 South Carolina	40 South Dakota	41 Tennessee	42 Texas	43 Utah	44 Vermont	45 Virginia	46 Washington	47 West Virginia	48 Wisconsin	49 Wyoming	50 U. S. Terr & Poss.*	Totals	Marginal Number
	ARKANSAS																																																			
1	University of Arkansas School of Medicine	1	..	..	1	..	..	..	..	.	..	..	1	2	1	..	..	6	..	..	..	..	..	2	5	..	..	..	..	1	..	2	1	1	3	3	..	..	..	..	..	..	9	..	..	..	..	1	1	..	..	41	1
	CALIFORNIA																																																			
2	College of Medical Evangelists	..	1	..	10	1	..	..	2	..	..	..	..	1	1	..	1	..	..	8	2	3	..	..	..	2	1	..	..	1	3	4	1	..	..	..	3	..	..	1	..	1	1	..	1	3	4	1	1	..	..	58	2
3	Stanford University School of Medicine	..	..	..	..	..	..	..	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	6	3
4	University of California Medical School	..	..	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	1	..	1	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	1	..	..	..	12	4
5	University of Southern California School of Medicine	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	5	5
	COLORADO																																																			
6	University of Colorado School of Medicine	..	..	..	2	..	..	..	..	..	..	..	2	..	2	1	..	..	..	1	2	3	..	..	..	..	1	1	..	..	2	4	..	..	2	..	..	1	..	..	..	..	3	2	..	..	..	..	..	..	..	..	29	6
	CONNECTICUT																																																			
7	Yale University School of Medicine	..	..	1	..	..	12	..	1	..	..	..	3	..	3	..	2	..	1	1	2	1	1	..	..	..	..	..	..	1	..	1	10	1	..	2	..	..	3	..	..	..	..	..	..	1	..	..	..	..	..	1	..	48	7
	DISTRICT OF COLUMBIA																																																			
8	George Washington University School of Medicine	..	..	..	4	..	2	..	11	..	1	..	2	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	2	1	..	1	..	..	..	..	..	..	1	1	..	7	1	1	..	..	..	37	8
9	Georgetown University School of Medicine	..	..	..	2	..	..	..	9	..	1	..	1	..	..	..	..	..	..	3	2	1	..	..	..	..	..	..	1	..	2	..	14	..	..	..	1	..	1	1	..	..	..	..	..	4	..	..	..	..	..	..	43	9
10	Howard University College of Medicine	1	..	1	2	..	..	..	3	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	3	..	3	..	..	2	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	1	20	10
	GEORGIA																																																			
11	Emory University School of Medicine	4	..	..	1	..	..	..	..	..	2	..	..	1	..	..	1	1	..	1	..	3	..	..	..	..	..	..	..	..	..	..	4	3	..	..	..	..	..	..	2	..	1	..	..	..	..	..	..	..	..	..	24	11
12	University of Georgia School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	2	..	1	1	..	..	..	..	..	..	1	..	3	1	..	1	..	1	..	..	..	..	13	12
	ILLINOIS																																																			
13	Loyola University School of Medicine	1	..	..	1	..	..	..	..	..	..	..	3	1	..	1	1	1	..	..	..	3	..	..	2	1	..	..	..	..	2	1	1	..	..	1	..	..	1	..	..	..	..	..	..	1	..	2	..	..	..	..	26	13
14	Northwestern University Medical School	..	1	1	8	1	..	..	..	..	..	..	15	4	2	1	2	..	..	..	..	4	3	1	..	1	..	..	..	..	1	..	4	1	..	6	2	1	2	..	..	1	..	6	..	..	2	1	1	3	..	2	77	14
15	University of Chicago, Rush Medical College	..	1	..	9	..	..	..	1	..	2	..	5	5	5	..	..	2	1	..	..	3	2	..	2	2	..	..	1	7	..	2	..	2	1	1	1	5	..	1	1	..	4	3	..	..	3	2	1	..	..	75	15
16	University of Chicago, The School of Medicine	..	..	..	2	1	..	..	..	..	..	..	2	4	1	..	1	..	..	..	..	..	..	..	..	..	1	..	..	1	..	2	1	..	1	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	18	16
17	University of Illinois College of Medicine	..	..	..	9	..	1	..	..	..	..	..	3	7	2	..	3	..	..	..	..	4	..	..	3	..	1	..	..	1	1	2	..	..	2	..	1	..	..	..	..	1	6	..	..	1	..	..	9	1	..	58	17
	INDIANA																																																			
18	Indiana University School of Medicine	..	..	..	6	..	..	..	1	..	2	..	4	..	2	..	2	..	..	..	..	8	..	..	2	..	..	..	..	..	..	..	1	1	..	4	..	..	..	..	..	..	2	..	1	1	..	..	1	..	1	39	18
	IOWA																																																			
19	State University of Iowa College of Medicine	..	1	..	4	..	1	..	..	..	1	..	8	1	1	1	..	..	..	1	..	4	..	1	..	2	1	..	1	1	1	2	1	1	5	..	1	1	..	..	1	1	2	..	..	2	..	1	2	..	..	50	19
	KANSAS																																																			
20	University of Kansas School of Medicine	..	..	..	6	1	..	..	..	..	1	..	1	1	2	..	1	..	1	..	2	6	..	1	18	1	1	..	..	..	1	1	..	..	3	1	..	..	..	..	..	..	3	..	..	1	1	1	..	..	..	55	20
	KENTUCKY																																																			
21	University of Louisville School of Medicine	1	..	1	1	..	..	..	1	..	1	..	3	6	1	..	3	..	..	..	..	2	1	1	4	..	..	..	..	4	..	2	2	1	9	..	..	1	..	..	..	4	1	2	..	..	..	3	..	1	1	57	21
	LOUISIANA																																																			
22	Louisiana State University School of Medicine	1	..	..	..	..	..	..	..	..	1	..	..	..	2	..	..	..	..	..	..	1	..	1	1	..	..	..	..	1	2	..	..	..	..	1	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	14	22
23	Tulane University of Louisiana School of Medicine	11	2	4	..	..	3	..	..	..	5	..	3	1	..	..	1	..	..	..	..	..	..	6	..	..	..	..	..	..	2	2	2	3	..	1	2	..	..	..	..	2	15	..	..	..	1	..	1	..	2	69	23
	MARYLAND																																																			
24	Johns Hopkins University School of Medicine	2	..	1	3	..	4	..	2	..	3	..	4	..	1	..	..	..	..	4	..	4	1	..	2	..	..	..	..	2	1	8	3	..	..	..	..	7	..	..	..	5	1	..	..	5	..	..	3	..	..	66	24
25	University of Maryland School of Medicine and College of Physicians and Surgeons	..	..	1	3	..	1	..	3	..	1	..	1	..	1	..	2	..	..	..	..	2	..	..	..	..	..	..	..	..	1	..	10	1	..	2	..	..	3	..	..	..	..	..	..	..	2	1	1	..	..	..	36	25
	MASSACHUSETTS																																																			
26	Boston University School of Medicine	..	..	..	1	..	4	..	..	..	..	..	..	1	..	..	..	..	2	..	18	2	..	..	1	..	..	..	2	..	1	3	..	1	3	..	..	2	1	..	..	..	..	..	..	..	..	..	1	..	..	43	26
27	Harvard Medical School	1	..	..	4	1	4	..	..	..	..	..	1	..	..	..	1	..	2	..	25	1	..	..	2	..	1	1	7	3	..	14	6	..	2	..	1	8	1	..	..	1	2	1	2	1	2	1	..	..	3	99	27
28	Tufts College Medical School	..	..	1	1	1	3	..	2	..	1	..	..	1	..	..	..	..	2	..	36	2	..	..	..	..	..	..	12	3	..	7	..	..	2	..	..	..	2	..	..	..	3	..	4	2	..	..	..	..	..	..	85	28
	MICHIGAN																																																			
29	University of Michigan Medical School	1	1	..	5	..	1	..	2	..	..	..	5	2	7	1	1	1	..	2	1	..	1	..	1	1	2	..	1	5	..	3	..	..	8	..	..	5	..	..	..	1	3	..	..	..	..	1	1	..	..	63	29
30	Wayne University College of Medicine	..	..	..	..	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	3	..	..	4	..	1	2	..	..	1	..	2	..	..	..	..	1	..	..	..	..	19	30
	MINNESOTA																																																			
31	University of Minnesota Medical School	1	1	1	13	..	1	..	..	..	1	..	5	1	3	..	1	..	..	..	1	6	3	1	2	5	1	..	..	1	..	2	1	2	2	1	1	2	..	..	2	..	4	..	..	1	5	..	2	..	1	74	31
	MISSOURI																																																			
32	St. Louis University School of Medicine	..	..	1	5	..	..	..	..	..	..	..	15	2	4	1	1	1	..	..	1	4	..	..	2	4	..	..	..	1	..	10	..	..	18	..	..	1	..	..	..	..	3	..	2	..	2	2	2	..	..	82	32
33	Washington University School of Medicine	2	1	2	2	3	..	..	..	..	..	..	17	4	5	..	..	1	..	..	..	5	2	1	1	..	..	..	..	2	1	1	2	..	10	1	2	1	..	..	..	1	3	2	..	1	2	1	1	..	1	78	33

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(CONTINUED FROM PAGE 2033)

Medical College applied for licensure by this method. The majority of the graduates of these schools with few examinees obtain the certificate of the National Board of Medical Examiners and receive their state license to practice medicine by endorsement of this certificate.

TABLE 15.—*Licentiates Representing Additions to the Medical Profession, 1940*

	Examination	Reciprocity and Endorsement	Total
Alabama	9	1	10
Arizona	10	..	10
Arkansas	58	..	58
California	350	8	358
Colorado	73	1	74
Connecticut	40	23	63
Delaware	8	..	8
District of Columbia	33	16	49
Florida	23	..	23
Georgia	85	1	86
Idaho	13	..	13
Illinois	498	20	518
Indiana	113	1	114
Iowa	88	5	93
Kansas	85	..	85
Kentucky	81	2	83
Louisiana	133	..	133
Maine	20	3	23
Maryland	164	10	174
Massachusetts	261	85	346
Michigan	186	5	191
Minnesota	124	6	130
Mississippi	40	..	40
Missouri	173	3	176
Montana	6	..	6
Nebraska	84	..	84
Nevada	1	..	1
New Hampshire	11	8	19
New Jersey	171	8	179
New Mexico	..	1	1
New York	892	169	1,061
North Carolina	65	15	80
North Dakota	6	1	7
Ohio	296	5	301
Oklahoma	38	..	38
Oregon	25	5	30
Pennsylvania	394	14	408
Rhode Island	8	3	11
South Carolina	37	2	39
South Dakota	4	..	4
Tennessee	195	1	196
Texas	199	2	201
Utah	6	1	7
Vermont	16	6	22
Virginia	142	7	149
Washington	29	3	32
West Virginia	16	3	19
Wisconsin	104	..	104
Wyoming	3	1	4
Hawaii and Puerto Rico	12	6	18
Totals	5,428	451	5,879

The figures shown in the table just described are subdivided by years in table 7, giving totals, passed and failed, separately for the graduates of (*a*) approved medical schools in the United States, (*b*) approved medical schools in Canada, (*c*) foreign faculties of medicine and (*d*) unapproved schools and schools

TABLE 16.—*Licentiates Representing Additions to the Medical Profession, 1935-1940*

Year	Examination	Reciprocity and Endorsement	Total
1935	5,099	411	5,510
1936	5,548	629	6,177
1937	5,812	612	6,424
1938	5,758	501	6,259
1939	5,584	460	6,044
1940	5,428	451	5,879
Totals	33,229	3,064	36,293

of osteopathy. Of the 3,430 graduates of all medical schools in 1940 (table 8) 179 failed; 157 of the 1,374 graduates of 1939 failed and 163 of the 678 graduates of 1938 failed. The greatest percentage of failures was among graduates of foreign and unapproved schools.

In table 9 is recorded the number of graduates of 1938, 1939 and 1940, respectively, examined and the results for each year.

TABLE 17.—*Licentiates Representing Additions to the Medical Profession Grouped in Geographic Divisions, 1940*

	Examination	Reciprocity and Endorsement	Total
New England			
Maine	20	3	23
New Hampshire	11	8	19
Vermont	16	6	22
Massachusetts	261	85	346
Rhode Island	8	3	11
Connecticut	40	23	63
	356	128	484
Middle Atlantic			
New York	892	169	1,061
New Jersey	171	8	179
Pennsylvania	394	14	408
	1,457	191	1,648
East North Central			
Ohio	296	5	301
Indiana	113	1	114
Illinois	498	20	518
Michigan	186	5	191
Wisconsin	104	..	104
	1,197	31	1,228
West North Central			
Minnesota	124	6	130
Iowa	88	5	93
Missouri	173	3	176
North Dakota	6	1	7
South Dakota	4	..	4
Nebraska	84	..	84
Kansas	85	..	85
	564	15	579
South Atlantic			
Delaware	8	..	8
Maryland	164	10	174
District of Columbia	33	16	49
Virginia	142	7	149
West Virginia	16	3	19
North Carolina	65	15	80
South Carolina	37	2	39
Georgia	85	1	86
Florida	23	..	23
	573	54	627
East South Central			
Kentucky	81	2	83
Tennessee	195	1	196
Alabama	9	1	10
Mississippi	40	..	40
	325	4	329
West South Central			
Arkansas	58	..	58
Louisiana	133	..	133
Oklahoma	38	..	38
Texas	199	2	201
	428	2	430
Mountain			
Montana	6	..	6
Idaho	13	..	13
Wyoming	3	1	4
Colorado	73	1	74
New Mexico	..	1	1
Arizona	10	..	10
Utah	6	1	7
Nevada	1	..	1
	112	4	116
Pacific			
Washington	29	3	32
Oregon	25	5	30
California	350	8	358
	404	16	420
Territory and Possession			
Hawaii	1	6	7
Puerto Rico	11	..	11
	12	6	18
Totals	5,428	451	5,879

CONSOLIDATED EXAMINATIONS

In table 11 are presented for each approved medical school in the United States and Canada the number of physicians examined for medical licensure, as well as the number who appeared for Part III, the final examination, of the National Board of Medical Examiners in 1940. It will be noted that in some instances schools having a high percentage of failures before licensing

boards had few, if any, failures before the National Board. In some cases also more were examined by the National Board. During the year 4,926 graduates of approved medical schools in the United States were examined by medical licensing boards, of whom 5.1 per cent failed, while in the consolidated figures, 5,939 were examined and 280, or 4.7 per cent, failed. Of the Canadian schools, 20.2 per cent failed state board tests and 18.8 the combined tests. Very little change was effected by combining figures for foreign graduates.

FAILURES BEFORE MEDICAL LICENSING BOARDS BY LICENTIATES, 1940

In table 12 are presented for each state the number licensed after failing a state licensing examination once and after two or more failures, these two groups being classified by indication whether the failure or failures have been in the state in which they are receiving a license or elsewhere and also if the failure has been in this state where licensed and elsewhere. The total number of candidates examined and licensed or granted licenses by endorsement or reciprocity in each state is also shown.

Of the 9,115 licenses issued during 1940, 702 had previously been unsuccessful before a licensing board. Of these, 285 were registered after having failed in one examination in the state in which they were licensed and 89 elsewhere, while 239 made more than one attempt to pass the licensing test in the state awarding the 1940 license, 44 elsewhere and 45 failed in the state where licensed in 1940 and also elsewhere.

In the computation of these statistics it was noted that 52 licentiates had failed at least five times. It was revealed that 16 failed five times, 8 had six failures,

TABLE 18.—*Licentiates Representing Additions to the Medical Profession Classified by Schools, 1940*

School	Examination	Reciprocity and Endorsement	Total
ARKANSAS			
University of Arkansas School of Medicine	66	2	68
CALIFORNIA			
College of Medical Evangelists	85	16	101
Stanford University School of Medicine	55	..	55
University of California Medical School	58	1	59
University of Southern California School of Medicine	35	..	35
COLORADO			
University of Colorado School of Medicine	48	2	50
CONNECTICUT			
Yale University School of Medicine	6	28	34
DISTRICT OF COLUMBIA			
George Washington University School of Medicine	40	8	48
Georgetown University School of Medicine	54	20	74
Howard University College of Medicine	28	..	28
GEORGIA			
Emory University School of Medicine	48	2	50
University of Georgia School of Medicine	32	..	32
ILLINOIS			
Loyola University School of Medicine	106	2	108
Northwestern University Medical School	145	14	159
University of Chicago, Rush Medical College	111	7	118
University of Chicago, The School of Medicine	31	4	35
University of Illinois College of Medicine	153	1	154
INDIANA			
Indiana University School of Medicine	104	..	104
IOWA			
State University of Iowa College of Medicine	75	..	75
KANSAS			
University of Kansas School of Medicine	69	..	69
KENTUCKY			
University of Louisville School of Medicine	90	2	92
LOUISIANA			
Louisiana State University School of Medicine	66	..	66
Tulane University of Louisiana School of Medicine	114	..	114
MARYLAND			
Johns Hopkins University School of Medicine	61	9	70
University of Maryland School of Medicine and College of Physicians and Surgeons	92	..	92
MASSACHUSETTS			
Boston University School of Medicine	14	24	38
Harvard Medical School	66	41	107
Tufts College Medical School	27	48	75
MICHIGAN			
University of Michigan Medical School	94	1	95
Wayne University College of Medicine	56	..	56
MINNESOTA			
University of Minnesota Medical School	99	5	104
MISSOURI			
St. Louis University School of Medicine	78	5	83
Washington University School of Medicine	86	4	90
NEBRASKA			
Creighton University School of Medicine	53	..	53
University of Nebraska College of Medicine	75	..	75
NEW YORK			
Albany Medical College	3	4	7
Columbia University College of Phys. and Surgs.	77	5	82
Cornell University Medical College	39	19	58
Long Island College of Medicine	43	15	58
New York Med. Coll., Flower and Fifth Ave. Hospitals	19	38	57
New York University College of Medicine	84	16	100
Syracuse University College of Medicine	28	3	31
University of Buffalo School of Medicine	19	17	36
University of Rochester School of Med. and Dentistry	20	..	20
NORTH CAROLINA			
Duke University School of Medicine	17	28	45
OHIO			
Ohio State University College of Medicine	76	..	76
University of Cincinnati College of Medicine	78	1	79
Western Reserve University School of Medicine	60	..	60
OKLAHOMA			
University of Oklahoma School of Medicine	46	..	46
OREGON			
University of Oregon Medical School	44	..	44
PENNSYLVANIA			
Hahnemann Medical College and Hospital of Phila.	105	..	105
Jefferson Medical College of Philadelphia	117	2	119
Temple University School of Medicine	108	..	108
University of Pennsylvania School of Medicine	104	4	108
University of Pittsburgh School of Medicine	50	..	50
Woman's Medical College of Pennsylvania	16	3	19
SOUTH CAROLINA			
Medical College of the State of South Carolina	34	1	35
TENNESSEE			
Meharry Medical College	38	..	38
University of Tennessee College of Medicine	95	1	96
Vanderbilt University School of Medicine	54	1	55
TEXAS			
Baylor University College of Medicine	75	1	76
University of Texas Faculty of Medicine	87	1	88
VERMONT			
University of Vermont College of Medicine	17	12	29
VIRGINIA			
Medical College of Virginia	63	3	66
University of Virginia Department of Medicine	63	..	63
WISCONSIN			
Marquette University School of Medicine	66	2	68
University of Wisconsin Medical School	55	1	56
CANADA			
Dalhousie University Faculty of Medicine	15	..	15
Laval University Faculty of Medicine	1	..	1
McGill University Faculty of Medicine	38	5	43
Queen's University Faculty of Medicine	10	..	10
University of Alberta Faculty of Medicine	2	..	2
University of Manitoba Faculty of Medicine	3	1	4
University of Toronto Faculty of Medicine	19	1	20
University of Western Ontario Medical School	10	..	10
Foreign Medical Faculties	857	11	868
Extinct Medical Schools	2	7	9
Unapproved Schools	251	2	253
Totals	5,428	451	5,879

The National Board did not examine any one from unapproved or extinct schools. The total of all examined before medical licensing boards was 7,921, of whom 6,282 passed and 1,639, or 20.7 per cent, failed. For both groups, 8,712 were examined, 7,052 passed and 1,660, or 19.1 per cent, failed. From this table it will be noted that the greatest number examined represented Northwestern University Medical School, 205, only 1 per cent of whom failed. From twenty schools more than 100 were examined. The total percentage of failures has been slightly reduced by including figures for the National Board but very materially so for certain individual schools.

9 failed seven and 6 eight times, 3 had nine failures, 3 ten, 3 eleven and 2 failed twelve times. Noteworthy were 2 candidates licensed in Massachusetts, 1 after nineteen and the other after twenty-five failures. The great majority of these physicians were Massachusetts examinees and graduates of unapproved schools. Fifteen received their education in foreign faculties of medicine. Of this group 1 failed seven times, the greatest number. There was 1 graduate of an approved medical school in the United States who made six attempts before securing registration.

Twenty-one states licensed in 1940 only physicians who never failed a state board examination, while New York licensed 358, Massachusetts 149 and California and New Jersey 32 who had already failed. Licensure of candidates having failures occurred in twenty-seven states, the District of Columbia and Puerto Rico. With the exception of California, Connecticut, Massachusetts, New Jersey, New York, Ohio and Texas no state licensed more than 15.

AGE AT LICENSURE

An examination of the records of candidates issued licenses in 1940 revealed the average age at first licensure to be 26 years while for those receiving original licenses by endorsement the age computed was 28.7. It appears that over 600 were born in 1913 and 1915 and more than 900 in 1914. In the endorsement group 67 were born in 1911, 77 in 1913, 62 in 1914 and 101 in 1912.

REGISTRATION BY RECIPROCITY AND ENDORSEMENT

The reciprocity or endorsement policies of the various states, the District of Columbia, Alaska, Hawaii, and Puerto Rico are presented in table 13. Definite reciprocal relations are reported by twenty-five states. Twenty-four states, including four that have regularly established reciprocal relations, will register licentiates who present credentials which correspond to those required by their respective states at the time such licenses were issued. The medical practice acts give the examining boards the privilege of using their discretion in determining the acceptability of a candidate. This chart has proved to be of material assistance to those contemplating moving their practice. In addition, there is also indicated whether diplomates of the National Board of Medical Examiners and retired officers of the government services are eligible for licensure on the basis of their credentials. Specific requirements such as professional practice, basic science certificate, oral examination and internship are recorded, as is also the fee for a license without written examination. For the benefit of physicians migrating to this country there is included a column outlining citizenship requirements. By footnote it can be noted whether physicians of Canadian birth are exempt from the citizenship requisite. In the majority of states graduates of foreign medical schools are not accepted on a reciprocal basis. Delaware, Florida, Idaho, Massachusetts, Rhode Island and Hawaii do not have reciprocal agreements with any state. Massachusetts, Rhode Island and Hawaii, however, will register diplomates of the National Board of Medical Examiners by endorsement. Those desiring licenses by reciprocity or endorsement in Arizona, Arkansas, Colorado, Connecticut, District of Columbia, Florida, Iowa, Michigan, Minnesota, Nebraska, Oklahoma, Oregon, Rhode Island, South Dakota, Washington and Wisconsin are required to obtain a certificate from the board of examiners in the basic sciences before being eligible for licensure. Other requisites or exemptions are mentioned in the footnotes. Some states also have additional requirements for graduates of schools outside the United States and Canada.

The number of physicians granted licenses in 1940 to practice medicine and surgery without examination on presentation of satisfactory credentials is given in table 10. There were 2,834 so registered who presented licenses from other states, the District of Columbia, Canada and foreign countries, the certificate of the National Board of Medical Examiners, one of the government services, or other credentials. The greatest number of licenses by this method were issued in New York, where 334 were registered. Seven other states endorsed more than 100 such candidates: California 212; New Jersey 164; Illinois 148; Texas 145; Michigan 137; Ohio 136 and Massachusetts 113. The largest group representing the same type of credentials were the 696 diplomates of the National Board of Medical Examiners. More than 100 physicians holding licenses in Illinois, Maryland, Missouri, Nebraska, New York, Ohio and Tennessee, respectively, were licensed in other states. The greatest number, 180, from any one state who secured licenses by endorsement was from New York, while 334 were registered in this state on the basis of credentials. These 334 physicians presented licenses from twenty-six states, the District of Columbia, Puerto Rico, Canada, France and Germany, or the certificate of the National Board of Medical Examiners. Only two licenses were granted during the year by endorsement of a license from Europe. Both were issued in New York. Two also were registered on the basis of Canadian credentials; 1 in New Hampshire presented a provincial license issued in Quebec, and the other licensed in New York on the basis of a dominion certificate. Four states accepted credentials from the territories and possessions of the United States. In the District of Columbia and Texas a licentiate of Alaska was registered, while California registered 1 from Hawaii and New York 1 from Puerto Rico. In addition, 6 were admitted to private practice in the Virgin Islands.

Twelve physicians were registered on the basis of commissions in the government services. Seven holding credentials from the U. S. Navy were given the right to practice without the requirement of an examination, as follows: California licensed 2, Kentucky 1, Texas and Virginia, 2 each. Two, 1 in California and in North Carolina, respectively, were certified on credentials from the U. S. Army and 3, 2 in California and 1 in Wisconsin, by endorsement of connections with the United States Public Health Service.

Not included in the table are 4 osteopaths licensed by the board of examiners in three states, namely 2 in New Hampshire and 1 in Texas granted the right to practice medicine and surgery, and 1 in Oregon was licensed to practice osteopathy and surgery.

Of the five homeopathic boards in existence—Arkansas, Connecticut, Delaware, Louisiana and Maryland—only one issued a license without examination. In Connecticut a diplomate of the National Board of Medical Examiners was so registered. The Eclectic Medical Examining Board in Arkansas did not register any one.

Diplomates of the National Board of Medical Examiners were registered in forty-two states and Hawaii.

New York had the greatest number of its licentiates certified in other states, 53, who were given the right to practice in New Jersey. Alabama, Arizona, Dela-

ware, Florida, Idaho, Montana, New Hampshire, New Mexico, North Dakota, Rhode Island, South Dakota, Utah, Vermont and Wyoming had less than 10 of their licentiates endorsed to other states. Nevada had no physicians endorsed. Delaware had 1 endorsed while Idaho and New Mexico had 2 each and Rhode Island 4.

Included among United States territories and possessions are Alaska, Hawaii, Puerto Rico and the Virgin Islands.

A total of 2,834 physicians secured licenses by endorsement of their credentials in 1940.

The physicians so licensed by reciprocity and endorsement and, in addition, 4 osteopaths registered by medical examining boards, are recorded by school of graduation and state or territory where licensed in table 14. Sixty-seven approved medical schools in the United States were represented, as well as eight in Canada, thirty-four faculties of medicine and two licensing corporations of other countries, twenty-seven medical schools now extinct, one unapproved school and several osteopathic colleges. The largest number of graduates of any one school were from Harvard Medical School, 99, who were licensed in twenty-seven states, Hawaii and the Virgin Islands; Tufts College Medical School had 85 licensed by this method in eighteen states and 82 graduates of St. Louis University School of Medicine in twenty-one states. Those holding degrees from institutions in foreign countries were recognized in fourteen states where 67 were registered on the basis of another state license issued in the United States. Thirty-four from schools now extinct migrated to seventeen states and 31 graduates of unapproved institutions received certificates to practice in eight states.

Of the 2,838 candidates licensed by reciprocity and endorsement, 2,654 were graduates of approved medical schools in the United States, 52 of nine schools so approved in Canada, 67 graduates of foreign medical faculties, 34 of institutions now extinct and 27 of unapproved schools and 4 from osteopathic colleges.

Four schools had fewer than 10 of its graduates registered by this process while forty-six had more than 25. Twenty from McGill University Faculty of Medicine appeared in ten states and the Virgin Islands. None represented the University of Montreal Faculty of Medicine and only 1 Dalhousie University Faculty of Medicine.

LICENTIATES REPRESENTING ADDITIONS TO THE MEDICAL PROFESSION

Licentiates representing additions to the medical profession during 1940 are recorded in table 15. The figures represent candidates examined in 1940 and licensed; also those examined in previous years whose licenses were withheld for lack of internship, citizenship, and so on, and issued in 1940, and those without a previous state license who were during the year certified on the basis of the certificate of the National Board of Medical Examiners, government services, Canadian and foreign credentials. In the main, however, they represent recent graduates. Altogether, 5,879 were added to the profession. The number removed by death annually approximates 4,000. It would appear that about 2,000 were added to the medical profession in 1940. While it is not certain that all those licensed are in practice, it may be assumed that the great majority are. It is interesting to note that of 9,115 licenses issued throughout the year, 5,879 are actual additions to the medical profession. The greatest number in any one state were added in New York, 1,061; Illinois added 518 and Pennsylvania 408. More than 300 received their first license in California, Massachusetts and Ohio. The states of Indiana, Louisiana, Maryland, Michigan, Minnesota, Missouri, New Jersey, Tennessee, Texas, Virginia and Wisconsin increased their population of physicians by between 100 and 201. Thirty states, the District of Columbia, Hawaii and Puerto Rico added less than 100. Of the licentiates forming additions to the medical profession last year, 5,428 secured this privilege by examination and 451 by the endorsement of credentials. Those licensed by endorsement consist of a few licensed on foreign credentials, but the great majority are diplomates of the National Board of Medical Examiners.

Figures for five previous years and 1940 are shown in table 16 for comparison. In 1935 there were 5,099 added by means of examination and 411 by endorsement of credentials, a total of 5,510. In 1936 there were 667 more added than in the previous year; in 1937, 247 more than in 1936, and 914 more than in 1935. In 1938 there were 165 fewer than in 1937 but 82 more than in 1936 and 749 more than in 1935. In 1939 again 215 fewer physicians were added as compared with 1938. In 1940 also there were 165 fewer than the previous year, and likewise fewer than any year except 1937, in which year 545 more were licensed.

TABLE 19.—*Requirements of Preliminary Training by Medical Licensing Boards*

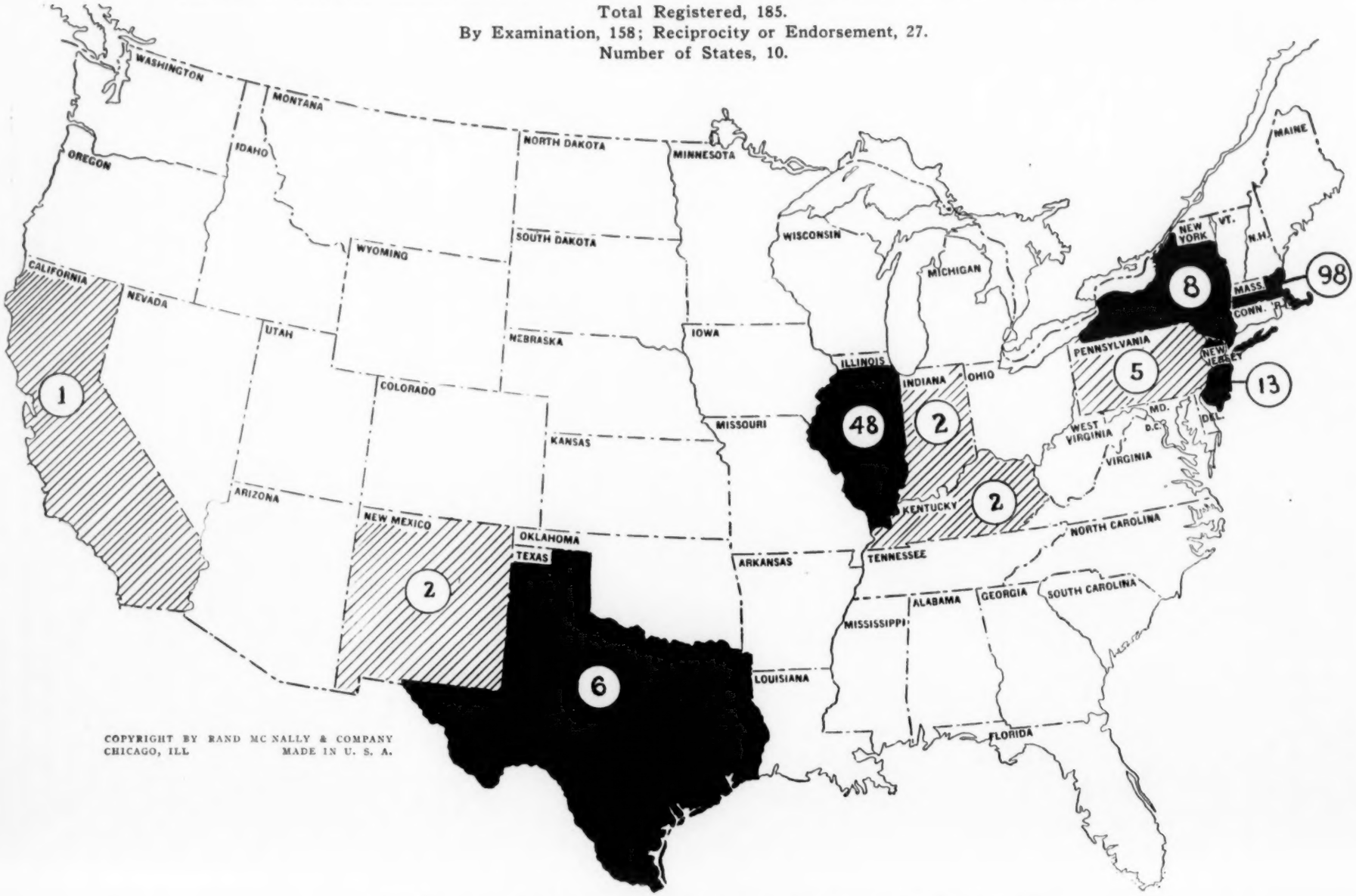
Two Years or More of College		
Alabama	Louisiana	Oregon
Alaska	Maine	Pennsylvania
Arizona	Maryland	Puerto Rico
Arkansas	Michigan	Rhode Island
Colorado	Minnesota	South Carolina
Delaware	Mississippi	South Dakota
District of Columbia	Montana	Tennessee
Florida	Nevada	Texas
Georgia	New Hampshire	Utah
Hawaii	New Jersey	Vermont
Idaho	New Mexico	Virginia
Illinois	New York	Washington
Indiana	North Carolina	West Virginia
Iowa	North Dakota	Wisconsin
Kansas	Ohio	Wyoming
Kentucky	Oklahoma	
One Year of College		
California		Connecticut
High School Graduation or Its Equivalent		
Massachusetts	Missouri	Nebraska

In six years altogether 36,293 physicians received original licenses, 33,229 after written examination and 3,064 by endorsement of credentials. In this same period 54,676 licenses were issued, 37,843 by examination and 16,833 by endorsement of credentials. Of these, 18,383 were previously licensed and 36,293 were not.

Increases in the physician population by means of first licenses are shown in table 17 and arranged in nine geographic divisions; namely, the New England, Middle Atlantic, East and West North Central, South Atlantic, East and West South Central, Mountain and Pacific States and Hawaii and Puerto Rico. The greatest number, 1,648, were added in the Middle Atlantic states. The East North Central group had a total of 1,228, the South Atlantic 627, the West North Central states 579, the New England group 484, the West South Central 430, the Pacific group 420, the East South Central 329 and the Mountain states 116. Seven were added in Hawaii and 11 in Puerto Rico.

CHART 1.—STATES REGISTERING GRADUATES OF UNAPPROVED MEDICAL SCHOOLS, 1940

Total Registered, 185.
By Examination, 158; Reciprocity or Endorsement, 27.
Number of States, 10.



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The states in black registered more than 5 such candidates, those shaded 5 or less.

In table 18 data pertaining to those securing their first medical licenses are arranged by school of graduation; the same as those examined are listed in table 2, existing approved medical schools in the United States, extinct medical schools, foreign faculties of medicine and unapproved schools.

TABLE 20.—*Internship Required by Medical Schools*

University of California Medical School
College of Medical Evangelists
University of Southern California School of Medicine
Stanford University School of Medicine
Loyola University School of Medicine
Northwestern University Medical School
University of Illinois College of Medicine
Wayne University College of Medicine
University of Minnesota Medical School
Duke University School of Medicine *
University of Cincinnati College of Medicine
Marquette University School of Medicine
University of Manitoba Faculty of Medicine
Dalhousie University Faculty of Medicine
McGill University Faculty of Medicine †
University of Montreal Faculty of Medicine

* Requires a two year internship.
† M.D. degree conferred on completion of four sessions of thirty-six teaching weeks. Not eligible for licensure until completion of internship.

The 5,879 physicians representing additions to the medical profession included graduates from sixty-seven approved medical schools of the United States, nine approved schools in Canada and others. The greatest number from any one school were 159 from Northwestern University Medical School. The next greatest, 154 from the University of Illinois College of Medicine. Fourteen schools contributed 100 or more. Of the United States schools, Albany Medical College had the fewest, 7, while only one represented Laval University Faculty of Medicine and 2, the University of Alberta Faculty of Medicine. McGill University Faculty of Medicine added 43 of its graduates to the physician population of the United States. From the United States schools there were 4,220 graduates added to the profession by examination and 425 by reciprocity or endorsement of credentials, a total of 4,645. From the Canadian schools 105 were added, by examination 98 and without 7. There were 868 graduates of foreign faculties of medicine, 9 from extinct schools and 253 from unapproved schools. Altogether there were 5,428 graduates of all schools licensed by examination and 451 licensed by reciprocity and endorsement, a total of 5,879.

TABLE 21.—*Internship Required by Medical Licensing Boards of All Candidates* *

Alabama	Michigan	Rhode Island
Alaska	New Hampshire	South Dakota
Delaware	New Jersey	Utah
District of Columbia	North Dakota	Vermont
Hawaii	Oklahoma	Washington
Idaho	Oregon	West Virginia
Illinois	Pennsylvania	Wisconsin
Iowa	Puerto Rico	Wyoming
Louisiana		

* In addition some states require the internship of graduates of medical faculties abroad and reciprocity or endorsement applicants. See tables 12 and 27.

STATE REQUIREMENTS OF PRELIMINARY TRAINING

The minimum requirement for admission to approved medical schools since 1918 has been two years of college training and since 1938 three years has been recommended. With but five exceptions, namely California, Connecticut, Massachusetts, Missouri and Nebraska, the state licensing boards also exact the two year requirement. Although their statutes do not conform with the two year college prerequisite, these states, with the exception of Massachusetts, do not license other than graduates of approved schools. Table 19 records the preliminary training required by each state medical licensing board. Alaska, Hawaii and Puerto Rico likewise require two years of preliminary training.

REQUIRED HOSPITAL INTERNSHIPS

In tables 20 and 21 are listed the medical schools and state licensing boards now requiring internships for the M.D. degree and state licensure respectively.

Twenty-one states, the District of Columbia, Alaska, Hawaii and Puerto Rico require that all applicants for licensure possess a hospital internship. The first state exacting this requirement was Pennsylvania in 1914. In addition, other states require graduates of medical faculties abroad and reciprocity or endorsement applicants to have completed an internship.

Twelve schools in the United States and three in Canada require an internship for graduation. Several medical schools will accept research or other clinical work in lieu of hospital service. The University of Minnesota Medical School in 1915 was the first school to adopt the internship as a basis for the M.D. degree. Louisiana State University Medical School, which since the medical school was organized in 1931 has offered

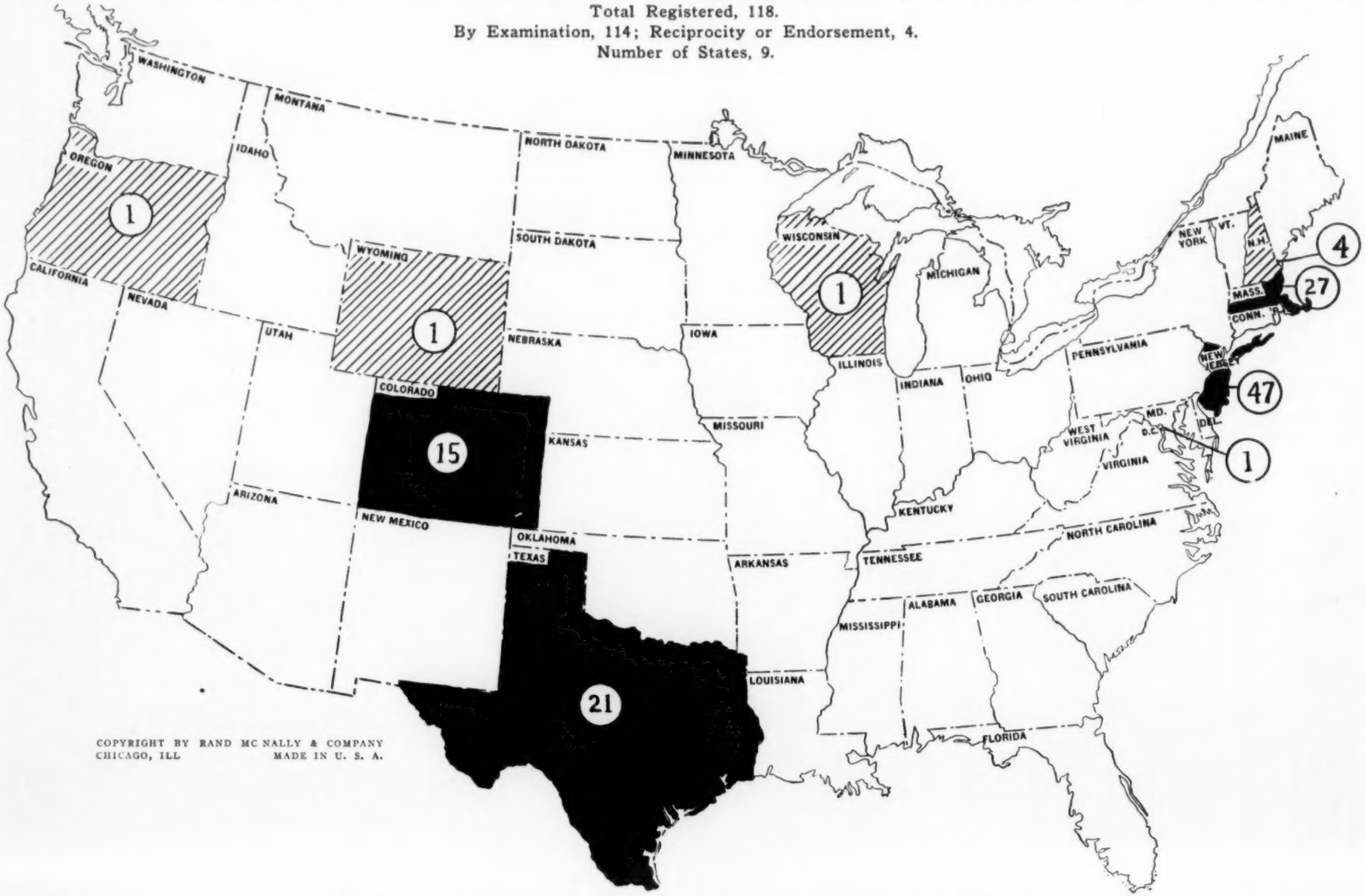
TABLE 22.—*Candidates Examined, 1936-1940*

	1936		1937		1938		1939		1940		Totals for 5 Years		
	P	F	P	F	P	F	P	F	P	F	P	F	% F
Alabama	23	4	26	1	29	0	14	0	26	0	118	5	4.1
Arizona	26	9	14	2	15	0	11	1	20	1	86	13	13.1
Arkansas	46	0	48	0	72	0	68	0	58	0	292	0	0.0
California	369	18	349	20	402	15	385	19	396	29	1,899	101	5.1
Colorado	79	1	76	3	78	3	69	3	75	4	377	14	3.6
Connecticut	76	30	80	21	73	24	53	47	53	33	335	155	31.6
Delaware	17	0	14	2	14	0	11	2	15	0	71	4	5.4
Dist. Columbia	32	1	41	0	33	0	54	0	49	2	209	3	1.4
Florida	154	44	164	38	153	41	172	27	131	6	774	156	16.8
Georgia	89	0	85	0	72	0	90	0	88	0	422	0	0.0
Idaho	13	0	20	0	28	0	24	8	40	1	125	9	6.7
Illinois	471	6	488	5	490	12	523	18	542	24	2,514	65	2.5
Indiana	118	0	123	2	108	1	108	0	118	0	575	3	0.5
Iowa	103	0	88	0	94	11	104	2	67	5	456	18	3.8
Kansas	96	0	82	0	93	1	85	0	92	0	448	1	0.2
Kentucky	84	0	81	1	81	1	88	0	77	0	411	2	0.5
Louisiana	133	1	174	1	184	2	153	0	154	1	798	5	0.6
Maine	53	0	58	2	39	7	42	6	32	14	224	29	11.5
Maryland	202	34	209	27	227	38	187	16	175	18	1,000	133	11.7
Massachusetts	271	239	302	218	207	220	277	257	338	298	1,395	1,232	46.9
Michigan	238	0	211	1	226	1	217	0	247	0	1,139	2	0.2
Minnesota	191	1	219	0	219	2	217	1	196	0	1,042	4	0.4
Mississippi	22	4	22	2	31	1	21	0	42	0	138	7	4.8
Missouri	202	3	168	12	174	3	211	0	179	0	934	18	1.9
Montana	15	0	4	1	11	0	11	0	9	0	50	1	2.0
Nebraska	75	0	79	0	85	0	78	0	84	0	401	0	0.0
Nevada	0	0	5	0	5	0	4	0	3	1	17	1	5.6
New Hampshire	24	0	18	0	17	0	14	2	9	1	82	3	3.5
New Jersey	168	6	250	33	281	53	237	109	179	36	1,115	237	17.5
New Mexico	3	0	2	0	2	0	2	0	0	1	9	1	10.0
New York	932	249	1,072	291	1,078	372	1,024	695	956	1093	5,062	2,700	34.8
North Carolina	64	0	83	0	85	0	57	0	65	0	354	0	0.0
North Dakota	14	0	13	0	15	2	17	1	24	0	83	3	3.5
Ohio	312	2	347	5	342	11	369	15	305	16	1,675	49	2.8
Oklahoma	70	0	49	0	46	0	43	0	47	0	255	0	0.0
Oregon	48	0	58	0	53	0	26	0	33	0	218	0	0.0
Pennsylvania	541	1	529	4	512	9	548	10	478	24	2,608	48	18.0
Rhode Island	22	7	38	7	26	1	25	0	19	0	130	15	10.3
South Carolina	32	0	46	1	39	1	48	0	41	0	206	2	1.0
South Dakota	15	0	17	2	8	0	15	0	7	0	62	2	3.1
Tennessee	178	1	208	1	179	3	193	0	188	1	946	6	0.6
Texas	178	19	181	19	200	26	208	15	209	25	976	104	9.6
Utah	23	0	10	0	12	0	17	0	9	0	71	0	0.0
Vermont	38	0	26	0	26	1	17	0	21	1	128	2	1.5
Virginia	110	0	150	2	127	0	113	1	142	1	642	4	0.6
Washington	58	1	57	0	72	0	59	1	48	0	294	2	0.7
West Virginia	59	0	60	1	65	1	33	0	38	0	255	2	0.8
Wisconsin	112	1	118	0	114	0	111	0	113	0	568	1	0.2
Wyoming	1	0	2	1	7	0	8	1	16	1	34	3	8.1
U. S. Terr. & Possessions	21	12	40	4	34	9	30	4	29	2	154	31	16.8
Total Examined	6,915		7,332		7,455		7,750		7,921		37,373		
Passed	6,221		6,602		6,583		6,489		6,282		32,177		
Failed	694		730		872		1,261		1,639		5,196		
Percentage Failed	10.0		10.0		11.7		16.3		20.7		13.9		

P = Passed; F = Failed.

CHART 2.—MEDICAL EXAMINING BOARDS REGISTERING OSTEOPATHS TO PRACTICE SURGERY OR MEDICINE AND SURGERY

Total Registered, 118.
By Examination, 114; Reciprocity or Endorsement, 4.
Number of States, 9.



The states in black registered more than 5 such candidates, those shaded 5 or less.

a five year course including an internship, discontinued the hospital year beginning with the class of 1940. The fifth year was also discontinued by McGill University Faculty of Medicine as a result of the reorganization of its medical curriculum affecting the freshman class

TABLE 23.—*Registration, 1904-1940*

Year	All Candidates Examined			Reciprocity or Endorsement	Total Registered
	Examined	Passed	Percentage Failed		
1904	7,056	5,693	19.3	1,004	6,697
1905	7,178	5,688	20.8	394	6,082
1906	8,040	6,373	20.7	1,502	7,875
1907	7,279	5,731	21.3	1,427	7,158
1908	7,775	6,089	21.7	1,284	7,373
1909	7,295	5,865	19.6	1,381	7,246
1910	7,010	5,718	18.4	1,640	7,358
1911	6,964	5,582	19.8	1,243	6,825
1912	6,880	5,467	20.5	1,272	6,739
1913	6,453	5,253	18.6	1,292	6,545
1914	5,579	4,379	21.5	1,439	5,818
1915	5,334	4,507	15.5	1,399	5,906
1916	4,878	4,151	14.9	1,353	5,504
1917	4,753	4,084	14.1	1,360	5,444
1918	3,666	3,183	13.2	1,047	4,230
1919	4,750	4,074	14.2	2,545	6,619
1920	4,796	4,062	15.3	2,558	6,620
1921	4,825	4,228	12.4	2,186	6,414
1922	4,031	3,539	12.2	2,073	5,612
1923	4,726	4,027	14.8	2,403	6,430
1924	5,390	4,754	11.8	1,919	6,673
1925	5,999	5,447	9.2	1,860	7,307
1926	5,767	5,311	7.9	1,954	7,265
1927	5,384	4,997	7.2	2,174	7,171
1928	5,454	5,086	6.7	2,228	7,314
1929	5,627	5,280	6.2	2,420	7,700
1930	5,563	5,247	5.7	2,366	7,613
1931	5,609	5,261	6.2	2,211	7,474
1932	5,636	5,238	7.6	1,884	7,122
1933	5,670	5,241	7.6	1,989	7,230
1934	6,141	5,624	8.4	2,160	7,785
1935	6,436	5,852	9.1	2,195	8,047
1936	6,915	6,221	10.0	2,774	8,995
1937	7,331	6,601	10.0	3,202	9,803
1938	7,457	6,583	11.7	2,956	9,541
1939	7,750	6,489	16.3	2,872	9,361
1940	7,921	6,282	20.7	2,839	9,121

TABLE 24.—*Graduates of Approved Schools and Others Registered, 1922-1940*

Year	Graduates of Approved Schools		Others		Totals
	Number	Per Cent	Number	Per Cent	
1922	4,519	80.5	1,093	19.5	5,612
1923	5,196	80.8	1,234	19.2	6,430
1924	5,686	85.2	987	14.8	6,673
1925	6,313	86.4	994	13.6	7,307
1926	6,441	88.7	824	11.3	7,265
1927	6,410	89.4	761	10.6	7,171
1928	6,585	90.1	729	9.9	7,314
1929	7,003	91.0	697	9.0	7,700
1930	7,011	92.1	602	7.9	7,613
1931	6,932	92.8	542	7.2	7,474
1932	6,675	93.7	447	6.3	7,122
1933	6,774	93.7	456	6.3	7,230
1934	7,171	92.1	614	7.9	7,785
1935	7,362	91.5	685	8.5	8,047
1936	7,932	88.2	1,063	11.8	8,995
1937	8,388	85.6	1,415	14.4	9,803
1938	8,313	87.1	1,228	12.9	9,541
1939	8,067	86.2	1,294	13.8	9,361
1940	7,753	85.0	1,367	15.0	9,120
Totals	130,531	88.5	17,032	11.5	147,563

of 1936-1937. The M.D. degree is conferred on completion of four sessions of thirty-six teaching weeks, but the holders of these degrees are not eligible to sit for the licensing examination until the completion of a hospital internship. The M.D. degree is likewise conferred by Duke University School of Medicine after completion of the senior year, but all graduates are required to spend at least two years in a hospital or laboratory after graduation.

Some of the medical schools and licensing boards have their own list of hospitals acceptable for intern training, but the approved list of the Council on Medical Education and Hospitals is generally in use.

CANDIDATES EXAMINED, 1936-1940

The number of candidates examined in the various states, territories and possessions in the five year period from 1936 to 1940 inclusive, showing those who passed and failed, are given in table 22.

In five years, 37,373 candidates were tested of whom 32,177 were successful in their examination. In this period, 5,062 were examined in New York and passed, 2,608 in Pennsylvania, 2,514 in Illinois, 1,899 in California, 1,675 in Ohio and 1,395 in Massachusetts. More than 1,000 were successful also in Michigan, Minnesota and New Jersey. In five years between 500 and 1,000 were examined and passed in each of eight states. Thirty-one states licensed fewer than 500 and ten less than 100. The smallest number, 9, passed the examinations in New Mexico.

The percentage of candidates who failed in the examinations in the past five years is given in the last

TABLE 25.—*Graduates of Unapproved Medical Schools Registered, 1935-1940*

	Examination						Reciprocity and Endorsement						
	1935	1936	1937	1938	1939	1940	1935	1936	1937	1938	1939	1940	Total
Arizona	0	0	2	1	2	0	0	0	0	0	0	0	5
Arkansas	0	0	0	1	0	0	0	0	0	1	0	0	2
California	1	0	0	0	0	1	2	0	0	0	1	0	5
Florida	1	1	2	2	1	0	0	0	0	0	0	0	7
Illinois	67	84	82	60	51	48	0	0	0	0	0	0	392
Indiana	1	0	0	0	0	0	0	0	0	3	1	2	7
Kentucky	1	0	0	0	0	0	0	2	2	1	2	2	10
Massachusetts	26	77	97	58	79	98	0	0	0	0	0	0	435
Missouri	0	0	0	0	0	0	2	0	0	1	0	0	3
Nebraska	0	0	0	0	0	0	0	0	1	0	0	0	1
New Jersey	0	5	1	7	0	0	0	1	2	4	4	13	37
New Mexico	0	1	0	1	0	0	2	1	0	2	0	2	9
New York	0	0	0	0	0	0	0	13	14	8	12	8	55
North Carolina	0	1	2	0	0	0	0	0	0	0	0	0	3
North Dakota	0	0	0	0	0	0	1	0	0	0	0	0	1
Ohio	16	31	23	32	36	0	0	0	0	0	0	0	138
Oklahoma	1	0	0	0	0	0	0	0	0	0	0	0	1
Pennsylvania	0	0	1	4	1	5	0	0	0	0	0	0	11
Rhode Island	1	0	0	0	0	0	0	0	0	0	0	0	1
South Dakota	1	0	0	0	0	0	0	0	0	0	0	0	1
Texas	0	0	0	1	4	6	0	0	3	0	0	0	14
Virginia	0	0	1	0	1	0	0	0	0	0	0	0	2
Wisconsin	0	0	0	0	0	0	0	1	0	0	0	0	1
Alaska, Hawaii and Puerto Rico	0	1	1	0	0	1	0	1	0	0	0	0	4
Totals	116	201	212	167	175	159	7	19	22	20	20	27	1,145

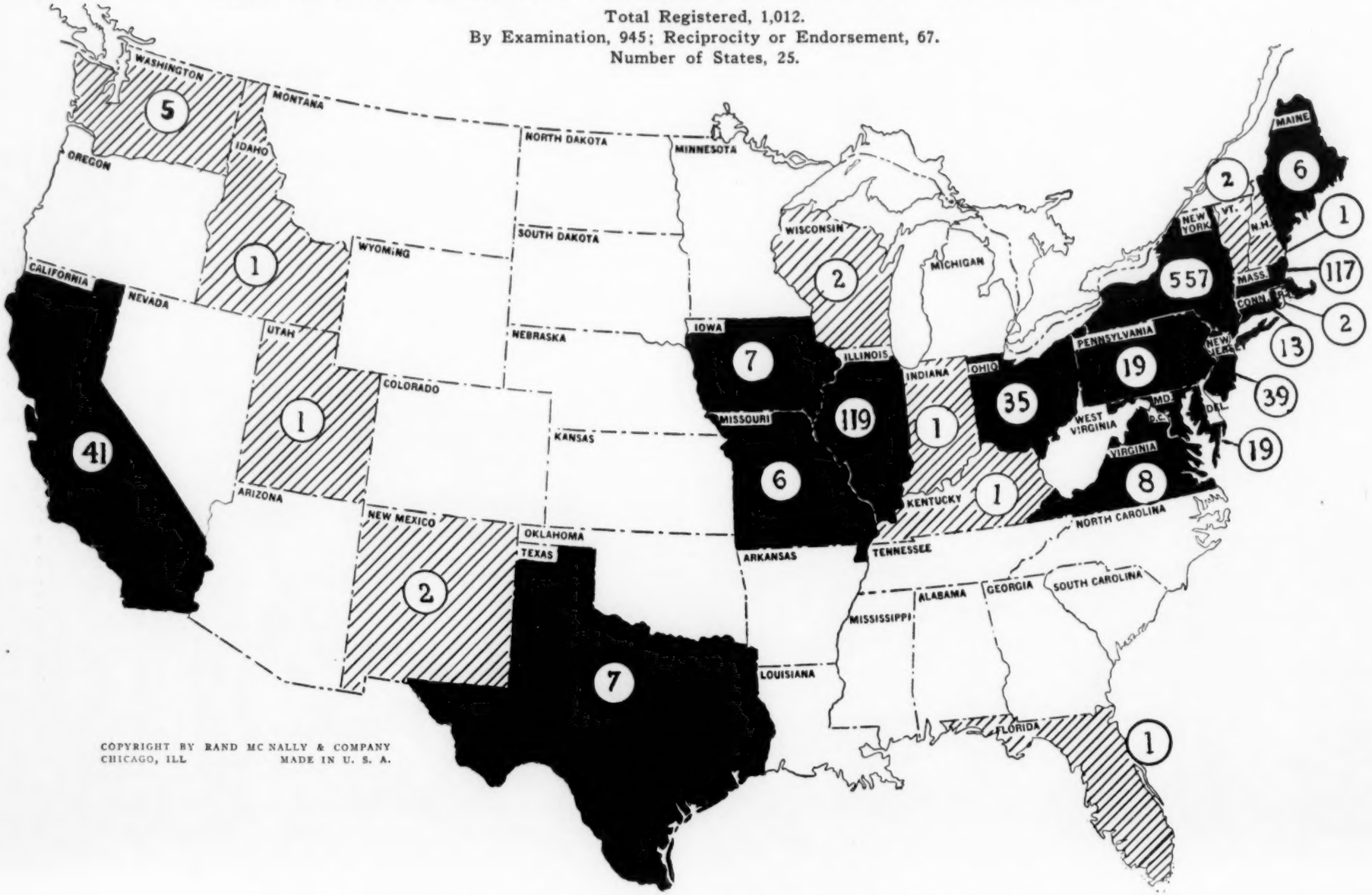
TABLE 26.—*Graduates of Schools of Osteopathy Registered by Medical Examining Boards, 1935-1940*

	Examination						Reciprocity and Endorsement						
	1935	1936	1937	1938	1939	1940	1935	1936	1937	1938	1939	1940	Total
Colorado	13	16	19	18	22	15	0	0	0	0	0	0	103
Connecticut	0	1	1	0	1	0	0	0	0	0	0	0	3
Dist. Columbia	0	0	0	1	0	1	0	0	0	0	0	0	2
Massachusetts	5	12	18	10	10	27	0	0	0	0	0	0	82
New Hampshire	1	1	4	2	0	2	0	0	2	1	0	2	15
New Jersey	2	0	52	46	45	47	0	0	0	0	0	0	192
Oregon	0	1	1	1	1	0	0	2	0	1	1	1	9
Texas	7	11	17	22	19	20	13	34	72	37	17	1	270
Virginia	4	4	2	1	0	0	1	0	0	0	0	0	12
Wisconsin	0	3	1	0	0	1	0	5	2	3	0	0	15
Wyoming	0	0	0	0	0	1	2	4	4	1	2	0	14
Totals	32	49	115	101	98	114	16	45	80	43	20	4	717

column of this table. The percentage of failures in all states has increased from 10 per cent in 1936 to 13.9 per cent. In five years 5,196 failed to pass examinations for medical licensure of 37,373 examined. The greatest percentage of failures occurred in Massachusetts, 46.9 per cent. The high percentage in this state is due to the fact that by law the licensing board is required to admit to its examination the graduates of

CHART 3.—STATES REGISTERING GRADUATES OF MEDICAL FACULTIES ABROAD, 1940

Total Registered, 1,012.
By Examination, 945; Reciprocity or Endorsement, 67.
Number of States, 25.



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The states in black registered more than 5 such candidates, those shaded 5 or less.

unapproved schools, many of whom repeatedly fail. New York had a failure percentage of 34.8 per cent. The high percentage in this state is occasioned by the fact that New York admits a great many graduates of foreign medical faculties to the licensing examination. The third highest percentage of failures was in Connecticut with 31.6. The majority of failures in this state also were graduates of foreign medical faculties. In Florida, 16.8 per cent failed. Florida has no reciprocal relations with any state, all applicants being required to take the licensing examination. Graduates of earlier years experience difficulty in passing examinations. On the other hand, Alabama, Colorado, the District of Columbia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Michigan, Minnesota, Mississippi, Missouri, Montana, New Hampshire, North Dakota, Ohio, South Carolina, South Dakota, Tennessee, Vermont, Virginia, Washington, West Virginia and Wisconsin—twenty-five states—had less than 5 per cent. In thirteen of these states the percentage of failures was less than 1 per cent. In five years seven states—Arkansas, Georgia, Nebraska, North Carolina, Oklahoma, Oregon and Utah—had no failures.

A total of 37,373 were examined in the five years from 1936 to 1940 inclusive, of whom 32,177 passed and 5,196, 13.9 per cent, failed.

These figures represent examinations given and not individuals. A candidate who fails more than once in a given year is counted as only one failure, but should he fail in one of the succeeding years in another state he is counted in that year also. Likewise, if a candidate fails and later passes, whether in the same or in a later year, he is counted as failed and passed. It seems likely that with 5,196 failures who apply for reexaminations and physicians who apply for licensure in more than one state, approximately 33,000 individuals were examined. This figure gives a fair estimate of the number of physicians added to the profession in five years by means of licensure after examination. On page 2036 will be found a table giving exact figures for the period 1935 to 1940 inclusive.

REGISTRATION, 1904-1940

A study of totals and percentages for thirty-seven years, from 1904 to 1940 inclusive, is presented in table 23. This tabulation includes figures for each year regarding the number examined and passed, the percentage failed, registered by reciprocity or endorsement and the total registered. There was no marked increase or decrease in the total number of candidates registered from 1904 to 1933, but in 1935 there was a very noticeable increase and also during the following three years, while since 1938 the number registered has decreased. However, the number licensed without examination since 1904 has been increasing owing to the almost universal recognition of the certificate of the National Board of Medical Examiners and the wider use of reciprocity or endorsement privileges. The decrease in the number registered in 1918 was due to the sudden withdrawal of physicians and recent graduates from civilian life. Again in 1922 there was a notable reduction, this figure resulting from the smaller number that began the study of medicine in 1918. The great increases during the years 1935 to 1938 inclusive and many also in succeeding years represent, chiefly, graduates of European medical schools.

The number who passed in 1940 was 207 fewer than in 1939 and also fewer than the two preceding years

(CONTINUED ON PAGE 2048)

TABLE 27.—*Requirements of Candidates for Medical Licensure on the Basis of Credentials Obtained in Countries Other Than the United States and Canada*

	Admitted to Examination	Admitted by Endorsement of State License*	Citizenship	Basic Science Certificate	Internship in Hospital in United States	Further Medical Training	Examination Fee, Dollars	Other Requirements
Alabama	+	+	+	..	+	..	10	1
Arizona	Not accepted							
Arkansas (regular board)	Not accepted							
California	+	+	..	..	+[18]	+[18]	25	11
Colorado	+	..	1st P	+	..	..	25[4]	8
Connecticut (regular board)	+	+	1st P	+	..	..	25	..
Delaware (regular board)	+	..	+	..	+	..	25	5
District of Columbia	..	+[6]	..	+	+	..	25	19
Florida	+	..	+	+	..	+[7]	25	..
Georgia	+	..	+	..	..	+[7]	20	..
Idaho	+	..	+	..	+	..	25	..
Illinois	+	..	1st P	..	+	..	10	8
Indiana	+	+	+[9]	..	..	+[7]	25	..
Iowa	+[10]	..	+	+	+[2]	+[2]	25	..
Kansas	+	..	+	..	..	..	25	11
Kentucky	Not accepted							
Louisiana	Not accepted			..	..	..	..	20
Maine	+	+	1st P	..	+	..	27	11
Maryland (regular board)	+	..	1st P	..	..	..	25	19
Massachusetts	+	..	1st P	..	..	..	25	..
Michigan	+	+	+	+	+	+[7]	..	21
Minnesota	Not accepted							
Mississippi	+	..	+	..	+	..	10.25	..
Missouri	+	+	+	..	+	..	15	..
Montana	+	+	+	..	..	..	50	..
Nebraska	+	+	+	+	..	..	25	..
Nevada	Not accepted							
New Hampshire	+	+[12]	+	..	+[14]	..	20	15
New Jersey	+	+	+	..	+[17]	..	25	..
New Mexico	Not accepted							
New York	+	+	1st P	..	..	..	25	..
North Carolina	Not accepted							
North Dakota	+	..	+	..	+	..	25	11
Ohio	+[10]	+	+	..	..	..	25	..
Oklahoma	Not accepted							
Oregon	+	..	..	+	+	+	25	..
Pennsylvania	+	..	1st P	..	+	..	25	..
Rhode Island	+	..	1st P	+	+[14]	+[14]	20	13
South Carolina	Not accepted							
South Dakota	Not accepted							
Tennessee	Not accepted							
Texas	+	+	+	..	..	..	25	..
Utah	Not accepted							
Vermont	+[16]	..	+	+	+	..	20	..
Virginia	+	..	+	..	..	..	25	..
Washington	+	..	1st P	+	+	+[7]	25	..
West Virginia	Not accepted							
Wisconsin	Not accepted							
Wyoming	Not accepted							
Alaska	+	+	+	..	+	..	25	..
Hawaii	+	..	+	..	+	..	25	12
Puerto Rico	+	+	+	..	+	..	25	..

Compilation of data furnished by state examining boards. This information is not guaranteed as there may have been changes of which this office has not been advised. For an authentic statement write directly to the medical board.

* Refer to chart of "Reciprocity and Endorsement Policies" for further data.

1. Certificate of National Board of Medical Examiners and licensure in country in which school of graduation is located.
2. Internship or one year in medical school in United States.
3. Certificate of National Board of Medical Examiners.
4. For graduates of last five years; if more than five years $50.
5. Residence of one year in Delaware.
6. Provided similar privileges are accorded licentiates of District of Columbia by licensing agency of the jurisdiction from which the applicant comes.
7. Senior year in class A medical school in United States.
8. No applications accepted after Feb. 21, 1941.
9. Reciprocity applicants only.
10. Applicaton must be filed six months prior to date of examination.
11. Licensed to practice medicine and surgery in country in which school of graduation is located, otherwise required to complete senior year in approved medical school in United States.
12. Diplomates of National Board of Medical Examiners eligible.
13. License to practice medicine and surgery in the country in which the school of graduation is located.
14. Internship and one year graduate work.
15. Diplomates of the National Board of Medical Examiners exempt from special requirements.
16. Applicants from schools in England and Scotland only.
17. Internship completed in foreign countries after July 1, 1934, not acceptable.
18. Rotating internship in approved hospital in the United States or completion of senior year in class A medical school in the United States.
19. These requirements apply also to graduates of Canadian schools.
20. Graduates from foreign medical colleges accepted if they present also a diploma from an approved medical school in the United States.
21. Examination fee, Lansing and Ann Arbor $25; Detroit $15.

In most states all foreign credentials must be visèed by the American consul.

TABLE 28.—*Physicians Examined on the Basis of Credentials Obtained in Countries Other Than the United States and Canada, 1940*

Marginal Number		1 California	2 Connecticut	3 Florida	4 Idaho	5 Illinois	6 Indiana	7 Iowa	8 Maine	9 Maryland	10 Massachusetts	11 Missouri	12 New Jersey	13 New Mexico	14 New York	15 Ohio	16 Pennsylvania	17 Rhode Island	18 Texas	19 Vermont	20 Virginia	21 Washington	22 Wisconsin	23 Puerto Rico	Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. of Boards Examined by	Marginal Number
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F						
	BELGIUM																													
1	Université Libre de Bruxelles										1 0				3 1										5	4	1	20.0	2	1
	CHINA																													
2	Pennsylvania Medical School, Shanghai																						1 0		1	1	0	0.0	1	2
	CZECHOSLOVAKIA																													
3	Deutsche Universität, Prag	2 1				2 0					6 5				13 23	3 0	2 0								57	28	29	50.9	6	3
4	Masarykova Universita, Brno									0 1															1	0	1	100.0	1	4
5	Universita Karlova, Praha	1 0				1 0					1 0				5 9										17	8	9	52.9	4	5
6	Univerzita Komenského, Bratislava														1 0										1	1	0	0.0	1	6
	DENMARK																													
7	Københavns Universitet														0 1										1	0	1	100.0	1	7
	ENGLAND																													
8	Charing Cross Hospital Medical School, London												1 0												1	1	0	0.0	1	8
9	Licentiate in Medicine, Surgery and Midwifery of the Apothecaries' Society of London														0 2										2	0	2	100.0	1	9
10	Licentiate of the Royal College of Physicians of London and Member of the Royal College of Surgeons of England	1 0									1 0				4 4										10	6	4	40.0	3	10
11	Middlesex Hospital Medical School, London												1 0												1	1	0	0.0	1	11
12	University of Cambridge														1 0										1	1	0	0.0	1	12
13	University of Oxford	1 0																							1	1	0	0.0	1	13
	ESTONIA																													
14	Université de Tartu										0 1														1	0	1	100.0	1	14
	FRANCE																													
15	Université de Lyon														1 2										3	1	2	66.7	1	15
16	Université de Montpellier															1 0									1	1	0	0.0	1	16
17	Université de Nancy														1 2										3	1	2	66.7	1	17
18	Université de Paris	1 0									1 0				5 11		1 0							2 1	22	10	12	54.5	5	18
19	Université de Strasbourg														1 2										3	1	2	66.7	1	19
	GERMANY																													
20	Albert-Ludwigs-Universität, Freiburg					1 1				1 0	1 6		0 1		5 21	2 1						1 0			41	11	30	73.2	7	20
21	Albertus-Universität, Königsberg					2 0					3 2		1 1		5 13	0 1									28	11	17	60.7	5	21
22	Christian-Albrechts-Universität, Kiel	1 0													3 4		0 1								9	4	5	55.6	3	22
23	Eberhard-Karls-Universität, Tübingen		0 1							1 0	1 1				1 3										8	3	5	62.5	4	23
24	Ernst-Moritz-Arndt-Universität, Greifswald										0 1		0 1												2	0	2	100.0	2	24
25	Friedrich-Alexanders-Universität, Erlangen			1 0							0 1				3 2		1 0								8	5	3	37.5	4	25
26	Friedrich-Wilhelms-Universität, Berlin	6 0	1 2			9 4	1 0	0 1		0 3	5 9		2 0		50 90	3 2		1 0	1 0			1 0			191	80	111	58.1	13	26
27	Georg August-Universität, Göttingen					1 0			0 1		0 1				4 6		1 0								14	6	8	57.1	5	27
28	Hamburgische Universität	1 0				2 0				1 0	0 2				7 8		1 0								22	12	10	45.5	6	28
29	Hessische Ludwigs-Universität, Giessen										1 0				3 9	0 1									14	4	10	71.4	3	29
30	Johann Wolfgang Goethe-Universität, Frankfurt-am-Main	2 1				2 0					5 1				10 14	0 1									36	19	17	47.2	5	30
31	Julius-Maximilians-Universität, Würzburg	0 1				2 0					0 1				13 23										40	15	25	62.5	4	31
32	Kaiser-Wilhelms-Universität, Strassburg					2 1					1 0				1 7										12	4	8	66.7	3	32
33	Karl-Franzens-Universität, Graz					1 0				1 1	0 2		2 1		4 5										17	8	9	52.9	5	33
34	Leopold-Franzens-Universität, Innsbruck	1 0				0 1									0 1										3	1	2	66.7	3	34
35	Ludwig-Maximilians-Universität, München	3 1	0 2			2 0				1 0	1 1	8 5		0 1	19 46	1 1	0 1								93	35	58	62.4	10	35
36	Medizinische Akademie Düsseldorf												1 1		3 3										8	4	4	50.0	2	36
37	Philipps-Universität, Marburg										0 2		0 1		0 1										4	0	4	100.0	3	37
38	Rheinische Friedrich-Wilhelms-Universität, Bonn	2 1				1 0			1 1	1 0	2 2				7 12	1 0									31	15	16	51.6	7	38
39	Schlesische-Friedrich-Wilhelms-Universität, Breslau	1 0				9 1				1 1	6 2				16 15										52	33	19	36.5	5	39
40	Thüringische Landesuniversität, Jena	1 0	0 1			1 0									2 3	0 1									9	4	5	55.6	5	40
41	Universität Heidelberg	1 1	0 3			5 2				0 1	5 3				13 23	5 3						1 0			66	30	36	54.5	8	41
42	Universität Köln					2 0					1 0				4 7										14	7	7	50.0	3	42
43	Universität Leipzig		2 1								1 1		1 0		7 6										19	11	8	42.1	4	43
44	Universität Rostock									1 0	0 1				2 6										10	3	7	70.0	3	44
45	Universität Wien	9 1	3 4			49 6			2 1		5 1	40	37		5 4				171	252	13	2	4	1	1 0	1 0		1 0		613	304	309	50.4	13	45
46	Vereinigten Friedrichs-Universität, Halle-Wittenberg					1 0					1 1				5 5						1 0				14	8	6	42.8	4	46

| | | |

TABLE 28.—*Physicians Examined on the Basis of Credentials Obtained in Countries Other Than the United States and Canada, 1940—Continued*

		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				
		California	Connecticut	Florida	Idaho	Illinois	Indiana	Iowa	Maine	Maryland	Massachusetts	Missouri	New Jersey	New Mexico	New York	Ohio	Pennsylvania	Rhode Island	Texas	Vermont	Virginia	Washington	Wisconsin	Puerto Rico	Totals			Marginal Number
		P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F	P F				
100	**University of Istanbul**														0 1										1 0	Examined—Passed		
	UNION OF SOCIALIST SOVIET REPUBLICS																								1 1	Examined—Failed		1
101	**First Leningrad Medical Institute**														0 1										1 100.0	Percentage of Failures		1
102	**First Moscow Medical Institute**																								1 0	No. of Boards Examined by		1
103	**Kharkov Medical Institute**										1 0														1 1	Marginal Number		2
104	**Kiev Medical Institute**										1 0														0 1			1
105	**Second Leningrad Medical Institute**									0 1					1 1										1 1			2
106	**Vinnitsa Medical Institute**										0 1														2 1			3
	TURKEY																								1 0			1
107	**Totals**	47	36	1	2	141	1	7	11	35	223	3	56	1	1,429	47	27	2	6	3	4	5	1	4	2,092	.....	.....	107
108	**Totals—Examined—Passed**	37	13	1	1	119	1	4	6	19	112	3	27	0	595	32	19	2	3	2	3	5	1	3	.....	948	.....	108
109	**Totals—Examined—Failed**	10	23	0	1	22	0	3	5	16	111	0	29	1	804	15	8	0	3	1	1	0	0	1	.....	1,144	.....	109
110	**Percentage—Failed**	21.3	63.9	0.0	50.0	15.6	0.0	42.9	45.5	45.7	49.8	0.0	51.8	100.0	62.6	31.9	29.6	0.0	50.0	33.3	25.0	0.0	0.0	25.0	.....	.....	54.7	110
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23				

but 61 more than in 1936 and 589 more than in 1904. The number registered without examination, 2,838, was 34 less than in 1939. Contrasting these figures with those for 1904 will show the greater use being made of this system of licensure. By both methods, examination and reciprocity or endorsement, 9,120 were registered, 241 less than in 1939. The number so registered in 1937, 9,803, represented the largest number of candidates registered in thirty-seven years. Of those examined in 1940, 20.7 per cent failed, as compared with the same percentage in 1906. At that time the high percentage of failures was due to the inadequate training provided by the proprietary schools in existence at that time. The improvement in the quality of training provided by the medical schools of the United States is evidenced by the lower failure percentages in succeeding years. During the last five years at least a great many of the failures represent, in addition to the graduates of unapproved schools, also those who present credentials from faculties of medicine abroad.

While these figures represent those registered in the years given, they do not in all states represent the number licensed in a given year. Licenses are withheld in many states, as indicated in the text describing table 1.

GRADUATES OF APPROVED SCHOOLS AND OTHERS REGISTERED, 1922-1940

The educational fitness of the individuals registered in nineteen years, 1922-1940, is shown in table 24. In the computation of these figures all schools rated as class A and B by the Council on Medical Education and Hospitals since 1907 are classified as approved. In the column "Others" are included graduates of institutions prior to 1907, of foreign faculties of medicine, class C graduates, osteopaths and graduates of schools that have been refused recognition. In 1928 the classification A, B and C by the Council was discontinued and medical schools have since been considered either approved or unapproved.

Of the 9,120 registered by all methods in 1940, 7,753, or 85 per cent, graduated from approved medical schools, and there were 1,367, 15 per cent, other practitioners registered.

The number of graduates of approved schools in the period shown has always been in the bracket above 4,000, while in the other groups it was until 1936 below 700.

Of the 9,120 graduates registered in 1940, 6,282 were registered after examination and 2,838 by reciprocity or endorsement of credentials. Among those examined there were 5,056 graduates of approved medical schools in the United States and Canada, 274 graduates of unapproved institutions and 952 others. Likewise among those registered by endorsement there were 2,697 graduates of approved medical schools in the United States and Canada, 41 from unapproved schools and 100 others. New York registered 722 graduates of approved schools of a total of 1,290. This state licensed the largest number with foreign credentials. Only approved graduates were registered in Alabama, Arizona, Arkansas, Delaware, Minnesota, Montana, Nebraska, North Dakota, South Carolina and South Dakota.

GRADUATES OF UNAPPROVED MEDICAL SCHOOLS REGISTERED, 1935-1940

Data regarding the number of graduates of those institutions which do not meet the standards for approval outlined by the House of Delegates who were

registered as medical licentiates with or without examination from 1935 to 1940 inclusive are recorded in table 25.

Ten states and Puerto Rico registered 186 such graduates in 1940, 159 by examination and 27 by reciprocity or endorsement. One was so registered in California and 2 each in Indiana, Kentucky and New Mexico. Massachusetts licensed the greatest number, 98, followed by Illinois with 48, New Jersey 13, New York 8, Texas 6 and Pennsylvania 5.

In the six year period shown, 1,145 graduates of unapproved institutions secured the right to practice medicine and surgery, 1,030 by examination and 115 by reciprocity or endorsement. The number so registered in 1940 was 9 fewer than in 1939.

Chart 1 on page 2040 indicates by shaded lines those states registering fewer than 6 graduates of unapproved schools and by a solid area those registering more than 5 such candidates during 1940.

GRADUATES OF SCHOOLS OF OSTEOPATHY REGISTERED BY MEDICAL EXAMINING BOARDS, 1935-1940

In table 26 are given the number of graduates of schools of osteopathy granted the privilege of practicing medicine, surgery, or both, by medical examining boards from 1935 to 1940 inclusive, eliminating, for instance, those osteopaths in California and a few other states granted medical or surgical privileges by the osteopathic board.

In 1940 nine states registered such individuals, 114 by examination and 20 by endorsement of credentials; namely, in Colorado, the District of Columbia, Massachusetts, New Hampshire, New Jersey, Oregon, Texas, Wisconsin and Wyoming. In 1939 also 118 secured similar privileges in seven states.

These facts for 1940 are shown graphically in chart 2, on page 2042, indicating by shaded lines those registering fewer than 6 graduates of osteopathic colleges and by a solid area more than 5 such graduates.

In Colorado osteopaths have no separate board. They are admitted to the examination for a license to practice medicine. The statute of Colorado is silent with respect to the scope of practice authorized by a license issued to osteopaths.

The Connecticut statute provides that any registered osteopath may practice either medicine, surgery, or both, as the case may be, after passing a satisfactory examination before the medical examining board.

The Massachusetts statute, by definition, includes osteopathy in the practice of medicine and does not differentiate the type of license issued to an osteopathic applicant. The medical practice act requires that any applicant for license to practice must be in possession of a degree of doctor of medicine, or its equivalent, from a legally chartered medical school which gives a full four year course of instruction of not less than thirty-two weeks in each year. An amendment to the medical practice act providing an approving authority is not yet effective.

In New Hampshire osteopaths are granted the right to practice medicine and surgery by the Board of Registration in Medicine.

In New Jersey, osteopathic licentiates who furnish proof (1) of having served for a period of two years as an intern or resident surgeon in an osteopathic or medical hospital approved by the state board of medical examiners, (2) of having completed a postgraduate course of two years in a college of osteopathy or medicine approved by the board or (3) of having had at least three years of practice in a hospital approved by the board may be admitted to an examination in pharmacology, therapeutics and surgery and if the examination is passed may obtain a license to practice medicine and surgery. After Nov. 1, 1941, all osteopathic applicants who meet the requirements of the medical practice act will receive licenses to practice medicine and surgery.

The statutes of Texas provide for the issuing of a license to practice medicine only. So far as the statutes indicate, the osteopaths are not restricted in their field of practice.

In Virginia, osteopaths may obtain the right to "perform surgery with the use of instruments" if they satisfy the board of medical examiners that they have had "adequate clinical facilities in their respective college of graduation, or by hospital work to enable them to perform such operations."

In Wyoming, the statutes contain no specific provision for the licensing of osteopaths. The medical practice act provides that the certificates issued to all applicants "shall be deemed licenses to practice medicine in all branches in which the applicant has taken examination in this state."

In the District of Columbia, Oregon and Wisconsin osteopaths are granted the right to practice surgery.

In Indiana the licenses issued to osteopaths authorize the holders to practice osteopathy, surgery and obstetrics. None were reported licensed in 1940.

PHYSICIANS EXAMINED ON THE BASIS OF CERTIFICATES OBTAINED IN COUNTRIES OTHER THAN THE UNITED STATES AND CANADA

Data recently received from state boards of medical examiners pertaining to the requirements of candidates for medical licensure holding credentials from medical schools outside of the United States and Canada are presented in table 27. Sixteen states report that, because of the inability to evaluate foreign credentials, holders of such certificates are not eligible for licensure while one state reported that no new applications have been accepted since Feb. 21, 1941. Nineteen states require full citizenship and ten states first papers as a condition precedent to taking the state board examination. In some states the requirement is made by rule of the medical board, in others the provision is by statute. In addition, other restrictions are imposed. Eleven states require a certificate in the basic sciences. Nineteen states require a one year internship in a United States hospital approved for intern training. In five states there is a requirement of a senior year's work in an approved medical school in the United States. In six states these graduates are not acceptable unless they can present a license to practice medicine and surgery in the country in which the school of graduation is located.

Table 28 presents figures for those physicians examined on the basis of credentials obtained in countries other than the United States and Canada by licensing boards of the United States and Puerto Rico. The figures represent both American and foreign born physicians educated abroad. It will be recalled that during the last ten years students from the United States have migrated to Europe to pursue medical courses. In 1937-1938, 1,346 citizens of the United States were so enrolled. The majority, however, of those now being licensed represent foreign born physi-

TABLE 29.—*Physicians Examined on the Basis of Credentials Obtained in Countries Other Than the United States and Canada by Licensing Boards of the United States and Possessions, 1935-1940*

	1935-1939		1940	
	Number Examined	Percentage Failed	Number Examined	Percentage Failed
AUSTRALIA				
University of Sydney	1	0.0	0	0.0
BELGIUM				
Université Catholique de Louvain	3	33.3	0	0.0
Université de Liége	5	60.0	0	0.0
Université Libre de Bruxelles	6	16.7	5	20.0
Universiteit Gent	4	75.0	0	0.0
CHILE				
Universidad de Chile, Santiago	2	0.0	0	0.0
CHINA				
Pennsylvania Medical School, Shanghai	5	20.0	1	0.0
Woman's Christian Medical College, Shanghai	1	0.0	0	0.0
CHOSEN (KOREA)				
Severance Union Medical College, Keijo	1	100.0	0	0.0
CUBA				
Universidad de la Habana	8	50.0	0	0.0
CZECHOSLOVAKIA				
Deutsche Universität, Prag	71	43.7	57	50.9
Masarykova Universita, Brno	4	50.0	1	100.0
Universita Karlova, Praha	13	84.6	17	52.9
Univerzita Komenského, Bratislava	5	40.0	1	0.0
DENMARK				
Kobenhavns Universitet	0	0.0	1	100.0
ENGLAND				
Charing Cross Hospital Medical School, London	0	0.0	1	0.0
Fellow of the Royal College of Physicians of London	1	0.0	0	0.0
Licentiate in Medicine, Surgery and Midwifery of the Apothecaries' Society of London	5	60.0	2	100.0
Licentiate of the Royal College of Physicians of London and Member of the Royal College of Physicians of London	2	50.0	0	0.0
Licentiate of the Royal College of Physicians of London and Member of the Royal College of Surgeons of England	66	10.6	10	40.0
Middlesex Hospital Medical School, London	0	0.0	1	0.0
University of Birmingham	3	0.0	0	0.0
University of Bristol	2	0.0	1	0.0
University of Cambridge	1	0.0	0	0.0
University of Durham, Newcastle-upon-Tyne	9	22.2	0	0.0
University of Liverpool	1	0.0	0	0.0
University of London	6	50.0	0	0.0
University of Oxford	1	0.0	1	0.0
University of Sheffield	8	0.0	0	0.0
ESTONIA				
Université de Tartu	2	100.0	1	100.0
FRANCE				
Université de Bordeaux	2	50.0	0	0.0
Université de Lyon	7	42.9	3	66.7
Université de Montpellier	7	28.6	1	0.0
Université de Nancy	6	66.7	3	66.7
Université de Paris	127	35.4	22	54.5
Université de Strasbourg	4	0.0	3	66.7
Université de Toulouse	5	20.0	0	0.0
GERMANY				
Albert-Ludwigs-Universität, Freiburg	88	37.5	41	73.2
Albertus-Universität, Königsberg	51	52.9	28	60.7
Christian-Albrechts-Universität, Kiel	21	42.9	9	55.6
Eberhard-Karls Universität, Tübingen	21	47.6	8	62.5
Ernst-Moritz-Arndt Universität Greifswald	1	100.0	2	100.0
Friedrich-Alexanders-Universität, Erlangen	26	65.4	8	37.5
Friedrich-Wilhelms-Universität, Berlin	498	38.6	191	58.1
Georg August-Universität, Göttingen	28	50.0	14	67.1
Hamburgische Universität	80	30.0	22	45.5
Hessische Ludwigs-Universität, Giessen	25	40.0	14	71.4
Johann Wolfgang Goethe-Universität, Frankfurt-am-Main	100	39.0	36	47.2
Julius-Maximilians-Universität, Würzburg	90	46.7	40	62.5
Kaiser-Wilhelms-Universität, Strassburg	20	40.0	12	66.7
Karl-Franzens-Universität, Graz	24	50.0	17	52.9
Leopold-Franzens-Universität, Innsbruck	10	30.0	3	66.7
Ludwig-Maximilians-Universität, München	176	40.3	93	62.4
Medizinische Akademie Düsseldorf	18	44.4	8	50.0
Philipps-Universität, Marburg	9	55.6	4	100.0
Rheinische Friedrich-Wilhelms-Universität, Bonn	63	46.0	31	51.6
Schlesische-Friedrich-Wilhelms-Universität, Breslau	135	41.5	52	36.5
Thüringische Landesuniversitat, Jena	10	40.0	9	55.6
Universität Heidelberg	133	38.3	66	54.5
Universität Köln	41	31.8	14	50.0
Universität Leipzig	68	47.1	19	42.1
Universität Rostock	22	54.5	10	70.0
Universität Wien	728	41.8	613	50.4
Vereinigten Friedrichs-Universität, Halle-Wittenberg	19	52.6	14	42.8
Westfälische Wilhelms-Universität, Münster	2	50.0	0	0.0
GREECE				
National University of Athens	18	83.3	3	100.0
GUATEMALA				
Universidad Nacional de Guatemala	2	50.0	0	0.0
HUNGARY				
Magyar Királyi Erzsébet Tudományegyetem, Pecs	14	64.3	22	59.1
Magyar Királyi Ferencz József Tudományegyetem, Szeged	9	44.4	7	71.4
Magyar Királyi Pázmány Petrus Tudományegyetem, Budapest	59	44.1	42	57.1
Magyar Királyi Tisza-István-Tudományegyetem, Debrecen	3	33.3	1	100.0
IRELAND				
Licentiate of the Apocatharies' Hall, Dublin	0	0.0	1	100.0
Licentiate of the Royal College of Physicians of Ireland and Licentiate of the Royal College of Surgeons in Ireland	5	40.0	0	0.0
IRELAND—Continued				
National University of Ireland	8	37.5	1	100.0
Queen's University, Belfast	1	0.0	0	0.0
University of Dublin	12	25.0	5	40.0
ITALY				
Regia Università di "Benito Mussolini" di Bari	2	50.0	3	100.0
Regia Università di Bologna	96	58.3	42	71.4
Regia Università di Catania	2	50.0	1	0.0
Regia Università di Firenze	17	35.3	8	50.0
Regia Università di Genova	14	78.6	8	75.0
Regia Università di Messina	8	100.0	3	100.0
Regia Università di Milano	10	60.0	12	41.7
Regia Università di Modena	12	75.0	5	100.0
Regia Università di Napoli	135	62.2	41	73.2
Regia Università di Padova	21	57.1	6	50.0
Regia Università di Palermo	17	70.6	5	100.0
Regia Università di Pavia	2	50.0	4	100.0
Regia Università di Perugia	5	40.0	8	62.5
Regia Università di Pisa	15	53.3	12	66.7
Regia Università di Roma	281	51.6	48	70.8
Regia Università di Siena	13	69.2	7	71.4
Regia Università di Torino	2	0.0	9	55.6
JAPAN				
Japan Medical College, Tokyo	4	100.0	1	100.0
LATVIA				
Latvijas Universitäte, Riga	2	100.0	1	100.0
LEBANON				
American University of Beirut	4	0.0	3	33.3
Université de St. Joseph, Beyrouth	1	0.0	1	100.0
MEXICO				
Escuela Libre de Homeopatia del Estado de Puebla	1	100.0	1	100.0
Escuela Médico Militar, Mexico, D. F.	6	83.3	0	0.0
Instituto Literario y Cientifico, San Luis Potosi	1	100.0	0	0.0
Universidad Nacional, México, D. F.	12	66.7	4	50.0
NETHERLANDS				
Rijks-Universiteit te Gronigen	0	0.0	3	33.3
Rijks-Universiteit te Leiden	2	0.0	0	0.0
Rijks-Universiteit te Utrecht	1	0.0	6	0.0
Universiteit van Amsterdam	2	0.0	3	33.3
NORWAY				
Kongelige Fredericks Universitet, Oslo	0	0.0	1	0.0
POLAND				
Uniwersytet Jagiellonski, Cracow	0	0.0	1	100.0
Uniwersytet Jana Kazimierza, Lwów	5	40.0	2	50.0
Uniwersytet Jozefa Pilsudskiégo, Warszawa	6	50.0	4	75.0
Uniwersytet Stefana Batorego, Wilno	2	50.0	6	33.3
PORTUGAL				
Universidade de Lisboa	2	50.0	1	100.0
RUMANIA				
Universitatea din Bucuresti	2	50.0	0	0.0
Universitatea Regele Ferdinand I-iu din Cluj	5	40.0	0	0.0
SCOTLAND				
Anderson College of Medicine, Glasgow	0	0.0	1	100.0
Fellow of the Royal Faculty of Physicians and Surgeons of Glasgow	1	0.0	0	0.0
Licentiate of the Royal College of Physicians of Edinburgh	1	0.0	0	0.0
Licentiate of the Royal College of Physicians of Edinburgh and Licentiate of the Royal College of Surgeons of Edinburgh	6	0.0	0	0.0
Licentiate of the Royal College of Physicians, of the Royal College of Surgeons, Edinburgh, and of the Royal Faculty of Physicians and Surgeons, Glasgow	231	19.5	71	28.2
School of Medicine of the Royal Colleges, Edinburgh	1	0.0	1	0.0
St. Mungo's College Medical School, Glasgow	0	0.0	1	0.0
University of Aberdeen	6	16.7	0	0.0
University of Edinburgh	55	9.1	2	0.0
University of Glasgow	36	0.0	2	50.0
University of St. Andrews	49	12.2	4	50.0
SOUTH AFRICA, UNION OF				
University of Cape Town	1	0.0	0	0.0
SPAIN				
Universidad Central de España, Madrid	2	33.3	2	50.0
Universidad de Santiago	1	0.0	0	0.0
SWEDEN				
Karolinska Mediko-Kirurgiska Institut, Stockholm	0	0.0	1	100.0
SWITZERLAND				
Universität Basel	130	31.5	36	47.2
Universität Bern	216	33.3	52	50.0
Universität Zürich	109	33.9	19	52.6
Université de Genève	96	32.3	14	64.3
Université de Lausanne	98	34.7	31	71.0
TURKEY				
University of Istanbul	2	100.0	1	100.0
UNION OF SOCIALIST SOVIET REPUBLICS				
First Leningrad Medical Institute	0	0.0	1	100.0
First Moscow Medical Institute	1	0.0	1	0.0
Kharkov Medical Institute	2	50.0	1	0.0
Kiev Medical Institute	4	100.0	2	50.0
Military Medical Academy, Leningrad	1	100.0	0	0.0
Saratov Medical Institute	2	50.0	0	0.0
Second Leningrad Medical Institute	2	50.0	2	50.0
Second Moscow Medical Institute	1	0.0	0	0.0
Tomsk Medical Institute	1	0.0	0	0.0
Vinnitsa Medical Institue	0	0.0	1	100.0
Voronezh Medical Institute	1	100.0	0	0.0
YUGOSLAVIA				
Zagrebaskog Universiteta	1	0.0	0	0.0
Totals	4,800	40.0	2,092	54.7

cians. One hundred and two faculties of medicine, including four licensing corporations, of twenty-two European and four other countries were represented. There were 2,092 examined, of whom 948 passed and 1,144, or 54.7 per cent, failed. Graduates of the University of Vienna represented the largest group, 613, and were examined in thirteen states, 50.4 per cent of whom failed. Thirteen states examined 191 graduates of the University of Berlin. Graduates of all other

TABLE 30.—*Physicians Examined on the Basis of Credentials Obtained in Countries Other Than the United States and Canada, 1930-1940*

Year	Number Examined	Passed	Percentage Failed
1930	167	92	44.9
1931	158	91	42.4
1932	182	96	47.3
1933	200	129	35.5
1934	285	170	40.2
1935	437	303	30.7
1936	588	382	35.0
1937	920	637	30.8
1938	1,164	716	38.5
1939	1,691	839	50.4
1940	2,092	948	54.7
Totals	7,884	4,403	44.2

schools were examined in fewer than ten states. Altogether twenty-two states and Puerto Rico examined physicians educated abroad. The state of New York had the greatest number, 1,429, of whom 535 passed and 894, or 62.6 per cent, failed. Massachusetts examined 223 with 112 successful and 111 unsuccessful results, or 49.8 per cent. Illinois examined 141 of whom 119 passed and 22 failed, or 15.6 per cent. Fifty-six were tested in New Jersey, 51.8 per cent of whom failed. California and Ohio each examined 47 with 21.3 per cent and 31.9 per cent failures, respectively. Other states examining a considerable number of graduates of foreign medical faculties included Connecticut 36, failures 63.9 per cent; Maryland 35, failures 45.7 per cent, and Pennsylvania 27 with 29.6 per cent failures. Thirteen states and Puerto Rico licensed fewer than 11 and ten of these states fewer than 5.

In addition to the figures presented in this table, 67 graduates of foreign faculties of medicine were licensed in 1940 without examination by endorsement of credentials.

Chart 3, page 2044, also shows in graphic form the states which during 1940 registered graduates of foreign faculties of medicine by examination, reciprocity and endorsement. Included in the figures on the chart are 67 granted licenses without examination, with but a few exceptions on the basis of a license obtained in the United States. From a perusal of tables 2, 10 and 14 it can be ascertained how many were licensed by both these means in the various states. The states which licensed more than 5 graduates are indicated by states reproduced in black; those shaded less than 5.

In table 29 are assembled figures showing the standing during the five year period 1935 to 1939 inclusive of the graduates of faculties of medicine outside the United States and Canada admitted to licensing examinations in this country. Included also is a tabulation for 1940. There were represented one hundred and thirty-six foreign faculties and ten of the licensing corporations of Great Britain. During the five year period shown 4,800 were examined and in 1940, 2,092. The largest number from any one school in the five year period shown was from the University of Vienna, 728, of whom 41.8 per cent failed. There were 498 from the University of Berlin, with 38.6 per cent failures. Large numbers also were examined who represented the Universities of Munich, Breslau, Heidelburg, Paris, Naples, Rome, Basel, Bern and Zurich. There were 231 in the five year period who presented in lieu of an M.D. degree the triple qualification certificate of Scotland. These individuals secured their education in the so-called extramural schools of Scotland. In 1940, many graduates were examined from schools in Czechoslovakia, Germany, Hungary, Italy, Scotland and Switzerland.

Table 30, the last in this group of statistics, records the number of graduates of faculties of medicine abroad examined for medical licensure in the United States in the eleven years 1930 to 1940 inclusive. In eleven years, 7,884 were examined, 4,403 were successful in their examination and 44.2 per cent failed. In 1940 the greatest number were examined, 2,092, 401 more than in 1939, 928 more than in 1938 and 1,925 more than in 1930.

BASIC SCIENCE BOARDS

Legislation creating and setting up basic requirements underlying the practice of the healing art has been enacted in fifteen states and the District of Columbia. These acts provide that certification by a board of examiners in the basic sciences be a prerequisite to eligibility for a license to practice the healing art whether the license is to be issued after examination or on the basis of endorsement or reciprocity. Some basic science boards have reciprocal agreements, but the certificate is obtainable after examination in the majority of instances.

During 1940 basic science boards functioned in Arizona, Arkansas, Colorado, Connecticut, District of Columbia, Florida, Iowa, Michigan, Minnesota, Nebraska, Oklahoma, Oregon, Rhode Island, South Dakota, Washington and Wisconsin.

Basic science requirements were established in Michigan in 1937 but no examinations were given until 1940 because of an injunction which was decided in favor of the board early in 1940. Only one new board was added in 1940, namely Rhode Island. Examinations were held for the first time in Michigan and Rhode

TABLE 1.—*States Having Basic Science Law and Year of Enactment*

Arizona	1936	Minnesota	1927
Arkansas	1929	Nebraska	1927
Colorado	1937	Oklahoma	1937
Connecticut	1925	Oregon	1933
District of Columbia	1929	Rhode Island	1940
Florida	1939	South Dakota	1939
Iowa	1935	Washington	1927
Michigan	1937	Wisconsin	1925

Island in June 1940. The years in which the various acts were enacted are shown in table 1.

Statistics based on the number of candidates certified in 1940 and those who failed to receive certification, together with the totals for other years shown for comparison, are included in the accompanying tables. Similar data have been published in the State Board Number of THE JOURNAL since 1928.

The subjects in which examinations are conducted in the respective states and the District of Columbia are given in table 2. The subjects included in basic science examinations are specified by the statutes. The examination boards may neither add to nor subtract from

such subjects. All boards examine in anatomy, pathology and physiology; fourteen examine in chemistry; twelve in bacteriology, seven in hygiene, two in diagnosis and one in hygiene and public health.

Physicians, osteopaths, chiropractors and unclassified applicants examined during 1940 in these various groups are included in table 3. There were 1,598 candidates examined by boards in the sixteen states named. Of this number 1,303 were doctors of medicine, 103 osteopaths and 29 chiropractors. Included among the 148 listed as unclassified applicants were a few doctors of dentistry, but for the majority it was not possible to determine what profession they represented. In applying for a basic science certificate it is not necessary in most of the states to mention the school of practice, but by checking the biographic records of the American Medical Association and published directories it has been possible to determine what profession the majority of the candidates represented.

Of all applicants examined, 1,293 passed and 305 failed, 19.1 per cent. Of all physicians examined 12.5 per cent failed, of the osteopaths 36.9 per cent failed, of the chiropractors 72.4 per cent, and of those unclassified 45.9 per cent. Among those who passed there were 1,140 physicians, 65 osteopaths, 8 chiropractors and 80 who were unclassified. Minnesota examined the greatest number, 254 of whom, 29.7 per cent, failed. The next largest number, 215, were examined in Florida, with 14.4 per cent failures. Osteopaths were examined in Colorado, Connecticut, the District of Columbia, Florida, Iowa, Michigan, Minnesota, Nebraska, Oregon, Washington and Wisconsin. In fact, osteopaths were examined in every state except Arizona, Arkansas, Oklahoma, Rhode Island and South Dakota. Chiropractors were examined in eight states, namely Connecticut, Iowa, Michigan, Minnesota, Rhode Island, South Dakota, Washington and Wisconsin.

The highest percentage of failures, 34.1, was in Arizona, which examined 29 physicians and 15 others. It is the policy of the Arizona Board of Examiners in the Basic Sciences not to list the names of applicants who fail examinations, nor does the law require the board to list the professional school of graduation of the examinees. The failures therefore for this state are recorded in the total column only. Three other states had more than 30 per cent failures.

The number of certificates issued by examination, reciprocity and endorsement are recorded in table 4. A total of 1,293 were granted after examination; 1,140

TABLE 2.—*Subjects*

	Examinations Required in							
	Anatomy	Bacteriology	Chemistry	Diagnosis	Hygiene	Pathology	Physiology	Hygiene and Public Health
Arizona	+	+	+	..	+	+	+	..
Arkansas	+	+	+	..	..	+	+	..
Colorado	+	+	+	..	..	+	+	..
Connecticut	+	..	..	+	+	+	+	..
Dist. Columbia	+	+	+	..	..	+	+	..
Florida	+	+	+	..	..	+	+	..
Iowa	+	+	+	..	+	+	+	..
Michigan	+	+	+	..	..	+	+	+
Minnesota	+	+	+	..	+	+	+	..
Nebraska	+	+	+	..	+	+	+	..
Oklahoma	+	+	+	..	..	+	+	..
Oregon	+	..	+	..	+	+	+	..
Rhode Island	+	+	+	..	..	+	+	..
South Dakota	+	+	+	..	..	+	+	..
Washington	+	..	+	..	+	+	+	..
Wisconsin	+	..	..	+	..	+	+	..

TABLE 3.—*Applicants Examined, 1940*

	Physicians or Medical Students		Osteopaths		Chiropractors		Unclassified		Total Examined	Passed	Failed	Percentage Failed
	P	F	P	F	P	F	P	F				
Arizona	29	..	0	..	0	..	0	..	44	29	15*	34.1
Arkansas	28	0	0	0	0	0	0	0	28	28	0	0.0
Colorado	27	2	2	1	0	0	2	2	36	31	5	13.9
Connecticut	113	6	1	1	2	1	0	0	124	116	8	6.5
District of Columbia	27	2	1	0	0	0	0	0	30	28	2	6.7
Florida	164	18	10	9	0	0	10	4	215	184	31	14.4
Iowa	64	4	33	8	2	3	21	18	153	120	33	21.6
Michigan	52	17	0	2	0	1	1	3	76	53	23	30.3
Minnesota	172	44	4	3	0	2	9	20	254	185	69	29.7
Nebraska	86	17	2	1	0	0	5	1	112	93	19	17.0
Oklahoma	56	5	0	0	0	0	1	0	62	57	5	8.1
Oregon	56	14	2	4	0	0	4	6	86	62	24	27.9
Rhode Island	29	0	0	0	1	1	17	1	49	47	2	4.1
South Dakota	8	2	0	0	1	1	0	1	13	9	4	30.8
Washington	100	27	1	6	0	11	0	0	145	101	44	30.3
Wisconsin	129	5	9	3	2	1	10	12	171	150	21	12.3
Totals—Examined	1,303		103		29		148		1,598			
Totals—Passed	1,140		65		8		80		1,293			
Totals—Failed	163		38		21		68		305			
Percentage Failed	12.5		36.9		72.4		45.9		19.1			

* School of practice undeterminable since names of failures not supplied.

TABLE 4.—*Certificates Issued by Examination, Reciprocity and Endorsement, 1940*

	Examination					Reciprocity and Endorsement					
	Physicians or Medical Stud.	Osteopaths	Chiropractors	Unclassified	Totals	Physicians or Medical Stud.	Osteopaths	Chiropractors	Unclassified	Totals	Registered
Arizona	29	0	0	6	29	0	0	0	0	0	29
Arkansas	28	0	0	0	28	29	1	0	0	30	58
Colorado	27	2	0	2	31	13	0	0	0	13	44
Connecticut	113	1	2	0	116	0	0	0	0	0	116
District of Columbia	27	1	0	0	28	49	0	0	0	49	77
Florida	164	10	0	10	184	0	0	0	0	0	184
Iowa	64	33	2	21	120	71	1	0	0	72	192
Michigan	52	0	0	1	53	2	0	0	0	2	55
Minnesota	172	4	0	9	185	77	2	0	0	79	264
Nebraska	86	2	0	5	93	13	0	0	0	13	106
Oklahoma	56	0	0	1	57	0	0	0	0	0	57
Oregon	56	2	0	4	62	13	0	1	0	14	76
Rhode Island	29	0	1	17	47	0	0	0	0	0	47
South Dakota	8	0	1	0	9	9	2	2	0	13	22
Washington	100	1	0	0	101	0	0	0	0	0	101
Wisconsin	129	9	2	10	150	48	11	0	2	61	211
Totals	1,140	65	8	80	1,293	324	17	3	2	346	1,639

TABLE 5.—*Total Candidates, 1927-1940*

		Physicians or Medical Students Examinations						Other Practitioners Examinations					
	No. of Boards	Examined	Passed	Failed	Percentage Failed	Endorsement	Total Certified	Examined	Passed	Failed	Percentage Failed	Endorsement	Total Certified
1927	5	305	279	26	8.5	26	305	22	15	7	31.8	1	16
1928	5	646	586	60	9.3	19	605	59	31	28	47.5	0	31
1929	7	668	610	58	8.7	75	685	66	31	35	53.0	0	31
1930	7	685	606	79	11.5	118	724	78	30	48	61.5	4	34
1931	7	680	586	94	13.8	141	727	107	48	59	55.1	0	48
1932	7	657	590	67	10.2	106	696	78	44	34	43.6	12	56
1933	8	601	527	74	12.3	121	648	60	30	30	50.0	10	40
1934	9	815	725	90	11.0	127	852	51	26	25	49.0	11	37
1935	10	882	761	121	13.7	110	871	74	33	41	55.4	4	37
1936	10	1,032	891	141	13.7	230	1,121	66	26	40	60.6	13	39
1937	12	1,231	1,061	170	13.8	192	1,253	113	41	72	63.7	10	51
1938	12	1,168	1,026	142	12.2	267	1,293	158	70	88	55.7	26	96
1939	14	1,141	1,013	128	11.2	727	1,740	218	97	121	55.5	204	391
1940	16	1,303	1,140	163	12.5	324	1,464	280	153	127	43.9	22	175
Totals		11,814	10,401	1,413	12.0	2,583	12,984	1,429	674	755	52.8	407	1,081

were issued to physicians or medical students, 65 to osteopaths, 8 to chiropractors and to 80 persons who were unclassified. There were also 346 certified without examination, by reciprocity and endorsement, representing 324 physicians or medical students, 17 osteopaths, 3 chiropractors and 2 who were unclassified. Minnesota accepted the greatest number without examination, 79, of whom 77 were physicians and 2 osteopaths. Arizona, Connecticut, Florida, Oklahoma, Rhode Island and Washington licensed none without examination. Arizona, Florida and Washington have no reciprocal agreements. Chiropractors and those unclassified were licensed without examination in 3 states.

Altogether 1,639 individuals received basic science certificates in 1940 in 16 states, ranging from 22 in South Dakota to 264 in Minnesota.

The number of candidates examined and certified, or certified by reciprocity or endorsement, from 1927 to 1940 inclusive will be found in table 5. Five boards functioning in 1927 examined 305 physicians or medical students, of whom 26, 8.5 per cent, failed and 22 other practitioners, of whom 7, or 31.8 per cent, failed. In 1940, by comparison, 1,639 were certified. During the fourteen year period a total of 12,984 physicians were examined, of whom 10,401 passed and 1,413, 12.0 per cent, failed and 1,429 other practitioners, of whom 52.8 per cent failed. During this period 2,583 physicians were certified without examination, while only 407 other practitioners were so registered.

Altogether 14,065 certificates have been issued by basic science boards since 1927, of whom 12,984 were granted to physicians and 1,081 to other practitioners. During this fourteen year period 11,814 physicians or medical students were examined, of whom 10,401 were registered, and 1,429 other practitioners were examined, 674 of whom received certificates. During this fourteen year period also 2,583 physicians and 407 others received certificates by examination, reciprocity and endorsement.

From the high percentage of failures in the other practitioner group it seems apparent that the enforcement of basic science laws affects mostly this group. The object of such laws is to provide a means of insuring that all candidates seeking the right to care for sick and injured people shall first possess a reasonable knowledge of the sciences fundamental to the healing art.

NATIONAL BOARD OF MEDICAL EXAMINERS

The National Board of Medical Examiners was founded in 1915 by Dr. W. L. Rodman, then President of the American Medical Association. He stated its aims and purposes to be "to establish a standard of examination and certification of graduates in medicine for the whole United States and its territories through which by the cooperation of the state and territorial boards of medical examiners its licentiates may be recognized for licensure to practice medicine."

The National Board was incorporated on March 17, 1922 under the laws of the District of Columbia. Its constitution provides for a membership of thirty. This includes six members representing the federal services, five members nominated by the Federation of State Medical Boards of the United States, three members nominated by the Association of American Medical Colleges and two members nominated by the Council on Medical Education and Hospitals of the American Medical Association. The remaining fourteen members are elected at large, especial attention being given to their geographic distribution.

The certificate of the National Board is accepted as an adequate qualification for a medical license by the licensing authorities of forty-three states and the District of Columbia, Alaska, the Canal Zone, Hawaii and Puerto Rico. Table 1 contains this information in tabulated form. Diplomates are required by some states to meet certain requirements.

The examination of the National Board in the basic sciences are accepted in lieu of the examinations in these subjects given by the basic science boards of Connecticut, Iowa, Minnesota, Nebraska and the District of Columbia.

Diplomates are also admitted to the final examination of the Conjoint Examining Boards of England and Ireland and the Triple Qualification Board of Scotland. The certificate is accepted by the United States Public Health Service in lieu of the usual written examination.

TABLE 1.—*States Endorsing Certificates of National Board of Medical Examiners*

Alabama	Illinois	Montana	Pennsylvania
Alaska	Indiana	Nebraska	Puerto Rico
Arizona	Iowa	Nevada	Rhode Island
Arkansas	Kansas	New Hampshire	South Carolina
California	Kentucky	New Jersey	South Dakota
Canal Zone	Maine	New Mexico	Tennessee
Colorado	Maryland	New York	Utah
Connecticut	Massachusetts	North Carolina	Vermont
Delaware	Michigan	North Dakota	Virginia
Dist. of Columbia	Minnesota	Ohio	Washington
Georgia	Mississippi	Oklahoma	West Virginia
Hawaii	Missouri	Oregon	Wyoming

TABLE 2.—*Examinations, 1916-1921*

Date	Total Examined	Passed	Failed	Percentage Failed
October 1916	10	5	5	50.0
June 1917	12	9	3	33.3
October 1917	28	22	6	21.5
January 1918	20	18	2	10.0
April 1918	23	18	5	26.1
December 1918	16	15	1	6.3
June 1919	52	51	1	1.9
February 1920	48	36	12	25.0
May 1920	60	46	14	23.3
February 1921	16	11	5	31.3
June 1921	40	37	3	7.5
Totals	325	268	57	14.3

In the following paragraphs are presented data regarding the examinations of and the issuance of certificates by the National Board of Medical Examiners. Similar data have been presented in the State Board Number of THE JOURNAL for twenty-three years.

The preparation for and participation by the United States in the World War materially interfered with the early development of the work of the National Board, but since 1922 the number obtaining its certificate has been steadily increasing. Up to Dec. 31, 1921 eleven examinations were held and two hundred and sixty-eight candidates were certified. In table 2 are recorded the results of each examination since 1916.

In 1922 the examination plans were changed. The examinations were divided into three separate parts, which must be taken and completed in the following sequence: Part I, a written examination, covers the work of the six fundamental medical sciences, part II, likewise a written examination, in five major clinical subjects, and part III the clinical preparation of the

candidate after at least one year's internship. Examinations in parts I and II are held at approved medical schools where there are five or more candidates desiring to be examined, and part III is held in twenty-two established centers throughout the United States.

TABLE 3.—*Examinations in Part I in 1940 and 1922-1940*

Date	Total Examinations	Passed	Incomplete	Failed	Percentage Failed
February	242	179	19	44	19.7
June	1,030	687	239	104	13.1
September	379	202	116	61	23.2
Totals	1,651	1,068	374	209	16.4
1922	388	263	58	67	20.3
1923	507	349	77	81	18.8
1924	591	415	69	107	20.5
1925	608	400	50	158	28.3
1926	625	436	104	85	16.3
1927	702	452	159	91	16.8
1928	843	533	231	79	12.9
1929	1,096	675	331	90	11.8
1930	1,260	801	345	114	12.5
1931	1,277	755	425	97	11.4
1932	1,307	847	371	89	9.5
1933	1,234	782	316	136	14.8
1934	1,241	809	347	85	9.5
1935	1,264	785	410	69	8.1
1936	1,344	858	363	123	12.5
1937	1,435	871	415	149	14.6
1938	1,654	986	508	160	14.1
1939	1,733	1,048	460	225	17.7
1940	1,651	1,068	374	209	16.4
Totals	20,760	13,133	5,413	2,214	14.4

The tables hereinafter presented enumerate the results of examinations in parts I, II and III for each calendar year since 1922, indicating those who passed and failed examinations, and those certified.

Candidates are required to take all six subjects of part I at a regular examination period unless entitled to take an incomplete examination or electing to take a divided examination. An incomplete examination is

TABLE 4.—*Examinations in Part II in 1940 and 1922-1940*

Date	Total Examinations	Passed	Incomplete	Failed	Percentage Failed
February	134	130	0	4	3.0
May	561	533	0	28	5.0
June	231	206	9	16	7.2
September	102	94	0	8	7.8
Totals	1,028	963	9	56	5.5
1922	109	90	0	19	17.4
1923	192	170	2	20	10.5
1924	267	227	0	40	15.0
1925	342	309	0	33	9.6
1926	381	334	1	46	12.1
1927	361	314	1	46	12.8
1928	410	371	1	38	9.3
1929	465	399	19	47	10.5
1930	620	543	7	70	11.4
1931	719	630	2	87	12.1
1932	732	674	0	58	7.9
1933	714	651	0	63	8.8
1934	633	583	0	50	7.9
1935	689	620	0	69	10.0
1936	768	716	2	50	6.5
1937	855	803	1	51	6.0
1938	861	815	0	46	5.3
1939	938	884	0	54	5.8
1940	1,028	963	9	56	5.5
Totals	11,084	10,096	45	943	8.5

arranged for candidates taking part I at the end of their second medical year in schools whose third year curriculums include courses in one or two subjects of this part. The examinations in the subjects not yet completed are therefore postponed and may be taken at any examination period after the candidate has completed them in the medical school. Also listed under this heading are those who wish to spend some additional time on one or two subjects. Any candidate not entitled to take an incomplete examination in part I may, if he so elects, take a divided examination by writing any four subjects at one time and the remaining two within thirteen months, but after at least one semester of study. The number taking divided examinations are included only when the examination has been completed. Incomplete examinations have been enumerated but were not included in percentage computations, since they represent neither a candidate eligible for certification nor a failure.

An average of 75 per cent of the grades attained in the six main divisions is necessary to pass part III. A candidate who fails to make an average of 75 per cent but has received grades of at least 75 per cent in three or more main divisions is required to repeat those divisions, either in whole or in part, in which he received grades below 75 per cent. In such case the candidate is "referred" in this subdivision and required after a three months interval to pass a reexamination. The privilege of a second reexamination is determined in

TABLE 5.—*Examinations in Part III, 1922-1940*

	Total Examinations	Passed	Failed	Percentage Failed
1922	22	22	0	0.0
1923	82	81	1	1.2
1924	126	120	6	4.8
1925	219	206	13	5.9
1926	255	243	12	4.7
1927	293	272	21	7.2
1928	322	306	16	5.0
1929	352	337	15	4.3
1930	420	401	19	4.5
1931	437	419	18	4.1
1932	550	522	28	5.1
1933	551	526	25	4.5
1934	567	548	19	3.4
1935	598	578	20	3.3
1936	576	547	29	5.0
1937	668	630	38	5.7
1938	706	682	24	3.4
1939	770	729	41	5.3
1940	791	770	21	2.7
Totals	8,305	7,939	366	4.4

Between 1916 and 1921 a total of 325 were examined, of whom 268 passed and 57, 14.3 per cent failed. Total certificates awarded, 8,207.

each case by the board. "Referred" candidates are likewise excluded from the statistics.

Three examinations in part I were held in 1940. Table 3 contains the results of these examinations together with the totals for eighteen years. In 1940, 1,651 examinations were given; 1,068 candidates passed, 374 were given incomplete examinations and 209, 16.4 per cent, failed.

Four examinations were given in part II, figures for which appear in table 4. Altogether 1,028 were so examined; 963 passed, 9 were reported as taking incomplete examinations and 56, 5.5 per cent, failed.

Since 1922 a total of 20,760 examinations have been given in part I and 11,084 in part II. From 1922 to 1940 inclusive, 13,133 were successful in passing part I and 10,096 in passing part II. The figures cover the totals of each examination given during a calendar year and include some who fail and are reexamined during the same year and also some who pass parts I and II in the same year. They represent therefore examinations conducted rather than individuals examined. In the nineteen year period since 1922 there have been 2,214 failures in part I, 14.4 per cent, and 943 in part II, 8.5 per cent. During this period 5,413 took incomplete examinations in part I and and 45 in part II.

The results of examinations in part III for the nineteen year period 1922 to 1940 inclusive are presented

in table 5. In 1940, 791 were examined, as compared with only 22 in 1922. Of those examined in 1940, 21, or 2.7 per cent, failed. The highest percentage of failures was in 1927, when 293 were examined and 21, 7.2 per cent, failed. In nineteen years 8,305 were examined, of whom 7,939 were granted certificates and 366, 4.4 per cent, failed. Here again a candidate having failed may subsequently receive a certificate in the same year.

Between 1916 and 1921, when the examination was not given in three parts, 325 were examined, of whom 268 passed and 57, 14.3 per cent, failed.

Altogether from 1916 up to and including 1940, 8,207 certificates have been awarded. Physicians who earn the certificate are designated Diplomates of the National Board and are privileged to use in any proper manner the designating initials D.N.B. The Diplomates have formed a national organization entitled "The Associated Diplomates of the National Board," which meets at the time and place of the annual meeting of the American Medical Association. A membership emblem in the form of a gold key has been adopted.

TABLE 6.—*Parts I, II and III, Excluding Duplications, 1922-1940*

	Total Examined	Passed	Incomplete	Failed	Percentage Failed
1922	525	381	58	86	18.4
1923	775	594	79	102	14.7
1924	978	756	69	153	16.8
1925	1,167	915	50	202	18.1
1926	1,161	930	105	126	11.9
1927	1,248	947	142	159	14.4
1928	1,430	1,101	211	118	9.7
1929	1,723	1,280	319	124	8.8
1930	2,044	1,547	322	175	10.2
1931	2,218	1,632	410	176	9.7
1932	2,342	1,850	355	137	6.9
1933	2,277	1,806	280	191	9.6
1934	2,261	1,801	330	130	6.7
1935	2,368	1,831	408	129	6.6
1936	2,517	1,989	353	175	8.1
1937	2,735	2,151	397	187	8.0
1938	2,992	2,308	493	191	7.6
1939	3,221	2,476	443	302	10.9
1940	3,186	2,595	363	228	8.1
Totals	37,168	28,890	5,187	3,091	9.7

The number of persons examined during any one year is given in table 6. The classification as passed or failed, in cases in which more than one examination has been taken in a given year, was based on the results of the last examination during the year in question. For example, if in 1940 a candidate passed part I but later in 1940 failed part II, he is listed as having failed. Taking this into consideration, there were 3,186 who took at least one of the examinations of the National Board of Medical Examiners during 1940, as compared with 525 in 1922. A total of 37,168 individuals were examined in one or more of the examinations in the nineteen years shown, of whom 28,890 passed, 5,187 took incomplete examinations and 3,091, 9.7 per cent, failed.

Examinations were held during 1940 at which 770 were successful. Graduates of fifty approved medical schools in the United States and three in Canada, and of fourteen faculties of medicine abroad were represented. Table 7 records the number of diplomates from each school certified in 1940. At the College of Medical Evangelists, students are required to pass parts I and II as a prerequisite to receiving their diploma. The comprehensive qualifying examination or part I of the examination of the National Board has been required of all medical students entering Yale University School of Medicine since the fall of 1937. Students of Georgetown University School of Medicine are urged to take the examinations of the National Board. Students admitted to Boston University School of Medicine subsequent to 1937 are required to pass part I in order to supplement the qualifications for promotions to the third year class. All students before entering the senior class at the New York Medical College must have taken part I of the examination of the National Board. Albany Medical College requires students to take part I and urges them to take part II. The University of Buffalo School of Medicine has required its students to pass part I since 1937. While the certificate is not required by these schools, their graduates and, in addition, those of Harvard, Tufts and Duke universities, represented the majority of those certified.

TABLE 7.—*Diplomates from Individual Medical Schools, 1940*

	Certificates Awarded		Certificates Awarded
Univ. of Arkansas	4	Creighton Univ	3
Coll. of Med. Evan	88	Albany Med. Coll	17
Stanford Univ	1	Columbia Univ	11
Univ. of California	2	Cornell Univ	22
Univ. of Colorado	10	Long Island Coll. of Med.	16
Yale Univ	33	New York Med. Coll	51
George Washington Univ.	9	New York Univ	16
Georgetown Univ	26	Syracuse Univ	4
Howard Univ	2	Univ. of Buffalo	37
Emory Univ	1	Duke Univ	46
Loyola Univ	4	Univ. of Cincinnati	3
Northwestern Univ	28	Univ. of Oklahoma	5
Rush Med. Coll	11	Univ. of Oregon	4
Univ. of Chicago	11	Jefferson Med. Coll	4
Univ. of Illinois	2	Univ. of Pennsylvania	5
Indiana Univ	4	Univ. of Pittsburgh	1
Univ. of Louisville	1	Woman's Med. Coll	7
Tulane Univ	2	Med. Coll. of S. Carolina	1
Johns Hopkins Univ	8	Meharry Med. Coll	2
Univ. of Maryland	2	Univ. of Tennessee	2
Boston Univ	37	Univ. of Vermont	13
Harvard Med. School	63	Univ. of Virginia	1
Tufts Coll. Med. School	76	Marquette Univ	4
Univ. of Michigan	2	McGill Univ	11
Univ. of Minnesota	11	Univ. of Manitoba	1
St. Louis Univ	16	Univ. of Western Ontario	1
Washington Univ	4	Foreign	24
Total			770

TABLE 8.—*Licenses Granted on the Basis of National Board Certificates, 1940*

Alabama	1	New Hampshire	13
Arizona	2	New Jersey	22
Arkansas	2	New Mexico	3
California	30	New York	194
Colorado	5	North Carolina	19
Connecticut	31	North Dakota	4
District of Columbia	29	Ohio	9
Georgia	2	Oklahoma	3
Illinois	33	Oregon	6
Indiana	3	Pennsylvania	32
Iowa	12	Rhode Island	5
Kentucky	3	South Carolina	2
Maine	7	South Dakota	2
Maryland	20	Tennessee	2
Massachusetts	113	Utah	2
Michigan	6	Vermont	14
Minnesota	9	Virginia	14
Mississippi	2	Washington	11
Missouri	8	West Virginia	6
Montana	2	Wyoming	2
Nebraska	1	Hawaii	9
Nevada	1		
Total			696

Diplomates licensed on the basis of their credentials increased from 2 in 1917 to 696 in 1940, 6,156 having been so licensed since the National Board was formed. However, 8,207 have received the certificate of the board. In 1940 diplomates were registered on the basis of credentials in forty-one states, the District of Columbia and Hawaii. The number so registered in each state are recorded in table 8.

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SATURDAY, MAY 3, 1941

DEMAND AND SUPPLY OF PHYSICIANS

The national defense program, which contemplates the training of an army of 1,400,000 men, will require, according to the statement made by Major Swift before the Senate Committee on Military Affairs, from seven to eight thousand reserve medical officers for each of the next three or four years. Assuming, as it does, that 50 per cent of the reserve medical officers would remain on active duty at the end of each year, there would be in 1944 some three thousand fewer available than the army would require unless additional recruits are secured for the Medical Officers Reserve Corps.

In the accompanying table are shown for each of the past six years the number of graduates from the approved medical schools of the United States and the number of physicians licensed for the first time (representing actual additions to the profession).

Annual Additions to the Medical Profession

Year	Graduates of United States Schools	Total Licentiates
1935	5,101	5,510
1936	5,183	6,177
1937	5,377	6,424
1938	5,194	6,259
1939	5,089	6,044
1940	5,097	5,879
Totals	31,041	36,293
Average	5,173	6,049

The number of medical graduates has remained nearly constant. The yearly average is 5,173. The number of physicians receiving their first licenses fluctuates more widely, but the average for the six years is 6,049. The difference, approximately 850, is accounted for by the graduates of foreign schools.

Whether or not the country can continue to recruit the medical profession from the available source is uncertain. However, if the supply of physicians trained in our own medical schools should be cut off or even diminished, a serious shortage of doctors would inevitably result with consequent impairment of the health both of the military forces and of the civilian population. Since, under the Selective Service Law of 1940, medical students are not exempt at the end of the current academic year, they will all have to be reclassified. Unless the local boards uniformly take the position that medical students are in training for an occupation necessary to the national health, many of them will be drafted into the army and in succeeding years the number of available physicians will be correspondingly decreased. The protection of the people's health is essential in any program of national defense. A well trained medical profession is the basis of all provisions for both military and civilian medical service.

MEDICAL STUDENTS AND THE SELECTIVE SERVICE

Notwithstanding the hearings that have been held before the Senate Committee on Military Affairs and the interest taken by innumerable agencies, official action has not yet been taken which will with any certainty insure the deferment of medical students and interns from acceptable medical schools and hospitals. From time to time the Committee on Medical Preparedness of the American Medical Association has sent resolutions to officials of the United States Army and of the Selective Service, urging some positive action. Now a general memorandum has been issued by the National Headquarters of the Selective Service System, directed to all state directors. It emphasizes the fact that the proper classification of students and other registrants in training or preparation constitutes one of the major problems of the Selective Service System. Deferment of students as a group expires on July 1. Prior to that date it will be necessary for local boards to reclassify them.

The memorandum points out that the intelligent deferment of registrants and their intelligent selection as the national interest may require constitute the fundamental purpose of the Selective Training and Service Act. The regulations that have been issued provide that a registrant shall be placed in class II-A if he is found by the local board to be a necessary man in any industry, business employment, cultural pursuit, governmental service, or any other service or endeavor or in training or preparation therefor, the maintenance of which is necessary to the national health, safety or interest. Local boards, it is expected, will give proper weight to this provision in dealing with claims for deferment of necessary men engaged in training or preparation for activities necessary to the national health. The memorandum offers this definite suggestion to state directors:

Students or other registrants undergoing instruction may be deferred in class II-A by the local board where the activity for which the registrant is in training or preparation is one essential to the national health, safety, or interest, and the registrant is found to be a necessary man. The necessity of providing

the required replacements for and additions to those men deemed by local boards as being engaged in essential activities should be considered by local boards in making their determination in individual cases. In determining whether or not a student is a necessary man within the provisions of paragraph 351, the local board should give due consideration to such factors as the length of time which the student has been pursuing the course in question, his relative progress and standing in such course, and his relative chances for employment or placement in the activity for which he is preparing. This latter factor may be evidenced by contracts of employment or other reasonable assurance that the registrant will engage in an essential activity.

The period of deferment in class II-A may not exceed six months but such deferment may be renewed from time to time if the local board finds that such continuance is justified under the regulations.

In a supplementary memorandum, all state directors have been further advised as follows:

Among the students and other registrants now undergoing instructions will be some who on or about July 1, 1941 will have completed their course of instruction but who will then be in training or preparation for examinations held under public authority for persons desiring to be licensed in various professional and technical fields. To avoid great hardship to the registrant and in keeping with the national interest, local boards in their discretion may defer such a registrant in class II-A for a relatively short period pending such examination.

OBITUARIES OF PHYSICIANS PUBLISHED IN 1940

The number of obituaries of physicians published in THE JOURNAL during 1940 was 3,633, of which 3,450 were of the United States and 183 of Canada. Four died in Puerto Rico, 3 each in China and Mexico, 2 each in Italy and Hawaii, 1 each in Africa, Brazil, India and the Philippine Islands. The obituaries of 122 women physicians were published, as compared with 116 in 1939. The number of graduates of medical schools in the United States for the fiscal year ended June 30, 1940 was 5,097. Deducting the number of physicians whose obituaries were published, there was a net addition to the profession for the year of 1,647, not including physicians coming to the United States from abroad.

Ages.—The average age at death of those classified as of the United States was 66.3, as compared with 66.1 in 1939. Twenty-five physicians died between the ages of 25 and 29, 41 between 30 and 34, 62 between 35 and 39, 91 between 40 and 44, 131 between 45 and 49, 208 between 50 and 54, 349 between 55 and 59, 500 between 60 and 64, 592 between 65 and 69, 523 between 70 and 74, 397 between 75 and 79, 312 between 80 and 84, 147 between 85 and 89, 59 between 90 and 94, 10 between 95 and 100 and 3 were 100 or more.

Causes.—Heart disease was again the leading cause of death, as it has been for many years. Some contributory causes are also included in the tabulation as they have been in former years. For example, when a report of the cause of death gave chronic nephritis and heart disease, it was published as such in THE JOURNAL and was reported on the statistical charts under both diseases. Thus heart disease was reported as a cause of death in 1,515 cases. Coronary thrombosis or coronary occlusion was specified in 641 cases, endocarditis or myocarditis in 357, angina pectoris in 50 and pericarditis in 1. Other diseases of the heart caused 466 deaths. Arteriosclerosis was the second most frequent cause, with 431. Cerebral hemorrhage was the third most frequent cause reported with 358 deaths; 16 additional deaths were reported as due to paralysis. Fourth on the list was cancer with 343 deaths; the prostate gland was reported affected in 60 cases, the stomach and liver in 58, the intestine in 34, the female genital organs in 4, the buccal cavity in 1; in 186 cases the part affected was not specified. Pneumonia was reported as the cause of death in 253 cases, of which 91 were specified as bronchopneumonia. Nephritis was the cause in 124 cases. The number of cases in which hypertension was reported was 123, embolism and thrombosis exclusive of coronary thrombosis 122, diabetes 75, uremia 75 and other diseases of the genitourinary system 62, tuberculosis 62 and other diseases of the respiratory system 14, cirrhosis of the liver 51 and other diseases of the liver 6, diseases of the prostate other than cancer 43, senility 26, ulcer of the stomach and duodenum 25 and other diseases of the stomach 4, leukemia 21, influenza and intestinal obstruction 19 each, arthritis and hemorrhage 18 each, edema 17, brain tumor 16, peritonitis 15, appendicitis and septicemia 14 each, other diseases of the digestive system 12, gangrene, cholecystitis and aneurysm 10 each, abscess of the lung, asthma, hernia and paralysis agitans 9 each, pernicious anemia and meningitis 8 each, other diseases of the spinal cord 2, biliary calculi and abscess 6 each, benign tumors, alcoholism, multiple sclerosis and esophageal varix 5 each, bronchitis, diverticulosis, encephalomalacia and streptococcic infection 4 each, amyotrophic lateral sclerosis, cerebral sclerosis, diseases of the veins, diverticulitis, empyema, encephalitis, myasthenia gravis and typhus 3 each, brain abscess, epilepsy, emphysema, hemolytic anemia, mastoiditis, pleurisy, poliomyelitis, shock and typhoid 2 each. Other diseases causing 1 death each included Addison's disease, amebiasis, anaphylactic shock, aplastic anemia, bacillary dysentery, biliary cirrhosis, carbuncle, cerebral edema, chronic dilatation of the esophagus, encephalomyelitis, erysipelas, exhaustion, exposure and starvation, gas bacillus infection, goiter, granulocytopenia, Hodgkin's disease, infection of the hand, infectious jaundice, Laënnec's cirrhosis, lateral sclerosis, locomotor ataxia, malaria, manic depressive psychosis, neuronitis, osteomyelitis, paresis, pellagra, perinephric abscess, periostitis, petrositis, progressive muscular atrophy, pulmonary cyst, pulmonary infarct, purpura haemorrhagica, pyloric

obstruction, ruptured aorta, ruptured esophagus due to hiccup, ruptured spleen, infected tonsils, spontaneous subarachnoid hemorrhage and tumor of lung.

Accidental Deaths.—One hundred and seventy-three physicians died as the result of accidents in 1940, compared with 159 in the previous year. Automobile accidents accounted for 105 deaths, falls 24, drowning 5, burns 3, airplane accidents, illuminating gas, overdoses of medicine and shooting 2 each, train accident and cut artery 1 each. In 18 cases unexplained fractures were given as causes of death. One physician was killed during a machine gun attack on a missionary station in North Africa; 1 swallowed a chicken bone; 1 died of injuries received when he dived into shallow water; 1 was suffocated when a mattress caught fire; 1 was killed when his horse was struck by an automobile; 1 died of a broken back, and 1 was injured when his gun exploded.

Suicides and Homicides.—Suicide was the cause of 65 deaths in 1940. Bullet wounds accounted for 31 of these deaths, hanging 9, poison 6, cut artery 5, overdose of medicine 3, gas 3, drowning, stabbing and injection of unknown drug 1 each. In 5 cases the method was not reported. In addition, there were 14 cases which could not be classified because of insufficient information, for which the following causes were given: bullet wounds 5, overdose of medicine and morphine poisoning 2 each, cut artery, poison and carbon monoxide 1 each. In 2 cases the method was not reported. There were 4 homicides.

Civil Positions.—Among the decedents were 223 physicians who were or had been teachers in medical schools, 370 who had served in the World War, 75 veterans of the Spanish American War and 10 veterans of the Civil War. One hundred and fifty-seven were or had been health officers, 98 members of boards of education, 62 members of boards of health and 20 members of state boards of medical examiners. There were 63 who were or had been coroners, 42 mayors, 41 authors, 32 bank presidents, 31 members of state legislatures, 21 editors, 11 missionaries, 10 police surgeons, 9 pharmacists, 9 postmasters, 8 members of city councils, 6 clergymen, 5 dentists, 3 lawyers, 2 judges, 2 justices of the peace. One had served as U. S. minister to Panama and Portugal and 1 had been aide to Governor Lehman of New York and to President Roosevelt when he was governor of New York. There were 23 physicians who had served in the U. S. Navy, 20 in the U. S. Public Health Service, 14 in the Veterans Administration, 12 in the U. S. Army Medical Corps and 3 in the Indian Medical Service.

Association Officers.—Among those who died who were or had been officers of the American Medical Association were 2 presidents, 1 vice president, 1 treasurer, 6 section officers, 3 members of councils and 2 trustees. Fifty-two members or former members of the House of Delegates died during the year. There were also 35 presidents or former presidents of state medical associations and 6 secretaries. Two chairmen of state military preparedness committees died.

Current Comment

THE U. S. GOVERNMENT VERSUS A. M. A.—NEXT STEP

On May 2 attorneys for the American Medical Association are scheduled to submit to the District Court three motions together with argument. The motions are: 1. A motion to set aside the verdict of guilty and to enter judgment in favor of the two corporate defendants. 2. A motion in arrest of judgment. 3. A motion for a new trial. No doubt the court will take these motions under advisement with a view to handing down the decision at a later date.

INTERNSHIPS AT COOK COUNTY HOSPITAL, CHICAGO

Until recently the internships at Cook County Hospital were limited to residents of Cook County who were graduates of medical schools in Chicago. By action of the Civil Service Commission the residence requirement has recently been waived and consequently the internships of the County Hospital are now open to graduates of approved medical schools in any part of the country. Cook County Hospital, the largest general hospital in the United States, has a capacity of 3,300 beds and 225 bassinets. In 1940 the admissions totaled 81,154, births 4,818, average daily census 3,108 and outpatient visits 255,724. The hospital, which is currently approved for intern training and residencies in communicable diseases, medicine, obstetrics, ophthalmology, otolaryngology, orthopedic surgery, pathology, pediatrics, psychiatry, radiology and surgery, has a house staff of one hundred and two interns and approximately ninety resident physicians. The internship is a rotating service of eighteen months in which each intern has a progressive assignment of six months as junior in medicine and surgery, six months as middler in specialties and six months as senior in the medical and surgical divisions. Thirty-four interns enter the hospital on January 1 and July 1 of each year. General maintenance, including uniforms, is furnished without stipend. Candidates for appointment are required to take a one day written competitive civil service examination covering medicine, surgery, obstetrics and laboratory subjects. Students may procure application blanks through the office of the dean of their medical school. The blanks will be sent to all approved schools before the end of the current college session. Requests for further information should be sent to Dr. Marshall Davison, Medical Director, Cook County Hospital, Chicago. This new regulation should be instrumental in advancing the quality of the internship, as it will broaden the intellectual horizons of young men associated in this large institution in the future.

MEDICAL PREPAREDNESS

In this section of The Journal each week will appear official notices by the Committee on Medical Preparedness of the American Medical Association, announcements by the Surgeon Generals of the Army, Navy and Public Health Service, and other governmental agencies dealing with medical preparedness, and such other information and announcements as will be useful to the medical profession.

MINIMUM PSYCHIATRIC INSPECTION

MEDICAL CIRCULAR NO. 1—REVISED

Selective Service System, Washington, D. C., May 1941.

The purpose of this circular is to present to physicians of Selective Service, the great majority of whom are not psychiatrists by profession, methods whereby they may suspect the existence of incapacitating mental and personality factors in registrants coming before them and may either eliminate such individuals or refer them to the psychiatrist of the medical advisory board for examination.

The military forces can use persons with many varieties of temperament and experience, but there is no place in an efficient army for the psychopath, the feebleminded or the insane. Many persons so unfortunately affected may do quite well in civil life, in accustomed jobs and in familiar circumstances, but when they are introduced into the unfamiliar environment of military life, with its necessary regimentation, close contact with other persons, separation from their families and inability to escape without fear of grave penalties, they develop various types of mental disorder. These individuals then become a source of trouble to their superiors, exert a deleterious influence on their associates and occupy a disproportionate amount of hospital space. The experience of the World War showed that mental disorder in soldiers was one of the main problems present both in the United States and in the Expeditionary Forces.

The selecting out of the mentally unfit should begin at the time the candidate appears for the local board physical examination. In many instances the registrant and his circumstances will be known to the board members and physicians, belonging as they do to the same community, and this knowledge should assist greatly in reaching a wise decision as to his acceptance or rejection. Pertinent information may be obtained from various charitable and welfare agencies in the community.

The following minimum psychiatric inspection revises the original plan offered Selective Service Headquarters by the William Alanson White Psychiatric Foundation to conform with War Department, Surgeon General's Office Circular Letter No. 19, March 12, 1941.

A MINIMUM PSYCHIATRIC INSPECTION OF REGISTRANTS

Mental or personality difficulties are revealed in the person's performances with other people who have come to mean something to him. Strangers may be met with an effective protective mask, a conventional manner. The examiner is a stranger unless and until he has overcome this reserve. This approach to the registrant can seldom be achieved by a show of force or authority. A pose of artificial friendliness is also unfortunate. The most successful approach is often one of straightforward professional inquiry coupled with real respect for the registrant's personality and due consideration for his feelings—which does not mean diffidence.

Whenever possible, the psychiatric examination should be made outside of easy hearing of other men. Matter of diagnostic significance is often concealed when the registrant feels that he must be impersonal and give replies that will not impress listeners with his peculiarity.

Questioning should begin with something that is obviously relevant to the immediate situation. One tries to elicit the difficulties which the registrant has been experiencing in his relations with others and with himself in his work and in his spare-time activities. The questioning might, for example, be somewhat as follows: The registrant being a machinist whose left index finger is badly scarred, the examiner asks how the injury occurred. There may follow a question as to just what job he has been doing; how many others are similarly employed in the shop; is it a pretty good crowd; does he like the work; is the employer fair? Have they treated him right; if not, secure details. What does he do with his spare time? With whom? Sociable, or prefers his own company? Try to discover how he is esteemed by his intimates; respected or otherwise. Is he self reliant, sure of himself or diffident, uncertain, chronically perplexed about something, shy? With men, with women or both? If anything at all unusual comes to light, pursue the topic until it is understood. Has the registrant gotten into any bad habits? Did he "break them"? Can he, e. g., stop smoking whenever he wishes? Is he ashamed of his "weakness"? Has he a low opinion of himself and, if so, why? What do his friends think of him? Does he like the idea of being trained for the national defense? The examiner pays close attention to content and implication of everything said and to any other clues, and in a matter of fact manner follows up whatever is not self evidently commonplace.

The examination is directed toward detecting any one of eight categories of handicap. The probable presence of some of these can often be detected by observing the registrant's behavior. In other cases one would not be able to suspect the presence of any morbid condition without some knowledge of the person's history. In the following summary the first three types of ailment are detectable, as a rule, only on the basis of the history, except in cases of decided feeblemindedness. The last two types, however, may often be suspected as a result of alert observation, if the observer knows what to look for and what to regard as significant.

It must not be supposed that any of the various kinds of behavior or items of personal history described in the following summary are absolutely and definitely diagnostic of anything in every case. The items are to be regarded as suggestive, often highly and importantly so, of the presence of the morbid condition indicated. It is possible that the presence of the behavior or the item of history in some particular individual may have little diagnostic significance. When the examining physician is in doubt, he should refer the registrant to the medical advisory board for further examination.

GROUP I. Mental defect or deficiency is suggested by slowness or stupidity in complying with clear instructions. The school record often reveals poor learning ability. The registrant may show lack of general information concerning native environment; inability to reason, to calculate, to plan, to construct, and the like; defect in judgment, foresight, language, output of effort; suggestibility, untidiness, lack of personal cleanliness, muscular awkwardness. The occupational history often shows a low level of employment, shifting jobs and an inability to hold positions which require responsibility and initiative. The psychiatrist of the medical advisory board will make or arrange for a psychometric test, if required.

GROUP II. Besides those who are deficient in intelligence, there are persons of average intelligence who are more or less incapable of profiting from experience. Again and again such a person has proved unreliable and disappointing to friends and family. The life history shows evidence of recurrent difficulties at home, at school and at work. He is unable to respond in an

adult social manner to the demands of honesty, truthfulness, decency and consideration of his fellows; is egocentric, impatient in demands for immediate gratifications without real regard for the future; may be a habitual liar and may have a criminal record. He may talk well, but his record shows that he has been undependable and has habitually evaded responsibilities. He has always been deflected from his goals by rebuffs and disappointments. He is inadaptable to employment or to enduring group life and is wholly disqualified for any form of national service. Such an individual has a psychopathic personality.

GROUP III. Major abnormalities of mood are shown by episodes of unreasonable elation or depression which have tended to recur without obvious connection with events. People who are known to be so mercurial in mood that their judgment is seriously impaired during the up or down swing of their moods should be rejected. Registrants known to have received medical or nursing care because of a morbid excitement or a depression should be rejected.

GROUP IV. Psychoneurotic disorders are a more difficult diagnostic problem. The signs and symptoms fall more or less clearly into one or another of three major categories—the hysterical, whose physical signs and symptoms, often so dramatic that they may seem fraudulent, do not follow anatomically understandable patterns; the morbidly anxious, made up of various signs and symptoms of fear; and the obsessional, which include such varied conditions as hypochondriacal states (preoccupational with one's ill health), morbid fears (phobias) and rituals of action and thought which they feel compelled to carry out.

These conditions are likely to escape notice unless one is particularly looking for them. Circumstances which might suggest the possible existence of such conditions are as follows: The hysterical individual is eager to make known his physical ailment and is apt to tell of miraculous, last-minute escapes from impending death—e. g., he tells of abdominal cramps that "nearly killed him," of a heart attack in which he was "nearly a goner," and so on. The morbidly anxious individual, as a reaction to being examined, may show unusual sweating, obviously not due to being overheated, tremors or a pulse rate indicating undue excitement. The obsessional individual may show insistence, usually in a somewhat embarrassed manner, on performing some simple act in an unusual way or in answering a question in a peculiarly circumstantial or indecisive fashion.

For purposes of classification, there are to be placed in this group persons showing the so-called psychosomatic disorders, mental or personality difficulties chiefly characterized by signs and symptoms of systemic disease—respiratory, gastrointestinal, cardiac, genitourinary or dermatologic. These include many cases of asthma, urticaria, "neurasthenic states," neurocirculatory asthenia, "effort syndrome" or disordered action of the heart, paroxysmal tachycardia, gastric hyperacidity, pylorospasm, gastric and duodenal ulceration, spastic constipation and diarrhea, mucous colitis, impotence, urinary urgency or frequency, and incontinence of semen. Look for a clear relationship in the history of attacks coinciding with periods of personal stress, and of improvement with separations from the accustomed stressful surroundings. These conditions sometimes appear early in the course of prepsychotic states discussed under group V.

GROUP V. The fifth category comprises the grave mental or personality handicaps. Prepsychotic and postpsychotic personalities and those actually suffering a schizophrenic ("dementia praecox") mental disorder manifest their condition by obscurely motivated peculiarities of behavior and thought. Of these, the so-called deteriorated states are the most obvious. Here belong the numerous shiftless, untidy, perhaps morose, sometimes nomadic individuals who had what was regarded as quite a normal childhood. Somewhere between the ages of 12 and 25 they underwent a change, acute or insidious, with dilapidation of their social interests and the habits in which they had been trained. They may or may not have received treatment in a hospital for mental diseases.

The paranoid personalities are another large division. These people cling to fantastic beliefs in their overweening importance and often feel that people are persecuting them or otherwise interfering with their career or well-being. Some of them believe that they are in communion with supernatural beings. Others believe that they are victims of plots, secret organizations, spy rings or religious or fraternal groups. They are often quite plausible in supporting these delusions by clever misinterpretation of facts. Some of them are very evasive and skilful at concealing the pattern of their disorder. A morbid suspiciousness of any one who takes an interest in them is frequent. They may become tense and hateful when interrogated. An attitude of unusual cautiousness or suspiciousness toward the examining physician, toward others in the local board office or toward fellow-registrants should suggest the possibility that the person may be paranoid.

The catatonic and prepsychotic states may present great difficulty in diagnosis. Perhaps the only obvious sign of these conditions is the impression of queerness which the person makes on any one who seeks to get acquainted with him. The actual oddities of behavior or thought may be subtle; it may be difficult, in retrospect, to point to any particular instances of the unusual. The most striking signs of these conditions may, in fact, come out in connection with the physical examination. The physician, at some stage of the physical examination, may observe a peculiar reaction which on questioning may awaken a suspicion of a prepsychotic state. These individuals frequently entertain unfounded convictions as to bodily peculiarities or disorders which they attribute to excessive sexual acts of one sort or another. These beliefs, sometimes hard to elicit, are often medically incredible and bizarre. Questioning them on intimate personal matters often leads to great embarrassment, confused speech or actual blocking of thought, so that they do not know what so say.

GROUP VI. Chronic inebriety may be either addiction to narcotic drugs or chronic alcoholism. A registrant is to be regarded as a drug addict if he is or has recently been a habitual user of any of the opium preparations, cocaine or cannabis indica (marihuana). Recent needle marks are suggestive; scars from the needle, abscesses on the arms, shoulders, buttocks or thighs are important, but are not always present. No diagnostic weight can be placed on the condition of the pupils. The use of heroin is most common among city gangsters.

A registrant will be regarded as a chronic alcoholic addict if he habitually or recurrently used alcohol to the point of social disablement as evidenced by loss of jobs, repeated arrests or a verified history of either repeated hospital treatment for acute alcoholic intoxication or institutional care because of chronic alcoholism.

GROUP VII. Any form of syphilis of the central nervous system is disqualifying. Look for the early signs such as pupillary changes, differences in the activity of the deep reflexes on the two sides, absence of knee and ankle jerks, tremors of hands, tongue and face, and speech defect, rather than for fully developed clinical pictures, and refer all suspected cases for full serologic study, including examination of spinal fluid.

GROUP VIII. Any active, existent organic disease of the brain, spinal cord or peripheral nerves is disqualifying. Aftereffects of such diseases are not disqualifying if they do not prevent satisfactory fulfilment of military duties, unless the disease is likely to recur. The epilepsies and epileptic equivalents are often overlooked.

Inquire for fainting spells, fits, convulsions, spasms, falling-out spells. There may be a history of continued bromide, phenobarbital or dilantin medication. Look for scars on the tongue and scalp. The personality type is not diagnostic but the epileptic individual may be egocentric, selfish, rigid and irritable with a tendency to excessive religiosity. A history of epileptic equivalents taking the form of temper tantrums, dazed reactions, confused states and excitements may be obtained.

Early signs and symptoms of the following conditions should be kept in mind:

Diseases of the brain:

The epilepsies and epileptic equivalents.
Postencephalitic syndromes.
Multiple sclerosis.
Cerebral vascular disease and residuals.
Brain tumor.
Chronic degenerative diseases.

Diseases of the spinal cord:
- Poliomyelitis.
- Tumor.
- Amyotrophic lateral sclerosis and progressive muscular atrophy.
- Subacute combined degeneration.
- Syringomyelia.

Diseases of the peripheral nerves:
- Injuries.
- Neuralgias.
- Multiple neuritis.

Cranial nerve disease:
- Optic atrophy.
- Ophthalmoplegia.
- Facial palsy.
- Deafness due to intracranial pathologic conditions.

The local examining physician should request the reference to a medical advisory board of any registrant whose mental or nervous fitness or unfitness he cannot definitely determine. Registrants who manifest any of the following deviations should be referred to the advisory board psychiatrist: instability, seclusiveness, sulkiness, sluggishness, discontent, lonesomeness, depression, shyness, suspicion, overboistrousness, timidity, sleeplessness, lack of initiative and ambition, personal uncleanliness, stupidity, dulness, resentfulness to disicpline, nocturnal incontinence, sleep walking, recognized queerness, suicidal tendencies either bona fide or not, and homosexual proclivities.

ARMY RESERVE OFFICERS ORDERED TO ACTIVE DUTY

FIRST CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, First Corps Area, which comprises the states of Maine, Vermont, New Hampshire, Rhode Island, Massachusetts and Connecticut:

ABODEELY, Robert A., 1st Lieut., Worcester, Mass., Fort Devens, Mass.
HAINES, Hilton D., Captain, Greenwich, Conn., Fort Devens, Mass.
KNAPP, Allen H., 1st Lieut., Calais, Me., Camp Edwards, Mass.
MANGIONE, Bernard J., Captain, Fall River, Mass., Fort Devens, Mass.
NEWTON, Louis, 1st Lieut., Bridgeport, Conn., Fort Devens, Mass.
ODDY, John G., 1st Lieut., Lawrence, Mass., Fort Devens, Mass.
POWELL, Platt R., 1st Lieut., Milton, Vt., Camp Edwards, Mass.
RYNARD, William M. W., 1st Lieut., Stamford, Conn., Fort Devens, Mass.
SELESNICK, Sydney, 1st Lieut., East Milton, Mass., Fort Devens, Mass.
SNEIDMAN, George I., Captain, Hartford, Conn., Fort Devens, Mass.
WIESNER, Ernest E., 1st Lieut., Brockton, Mass., Fort Devens, Mass.
WHITNEY, Royal A., 1st Lieut., White River Junction, Vt., Fort Devens, Mass.
YOUNG, Morris N., Captain, Lawrence, Mass., Fort Devens, Mass.

SECOND CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Second Corps Area, which comprises the states of New York, New Jersey and Delaware:

ADLER, Howard E., 1st Lieut., New York, Fort Benning, Ga.
BERKOWITZ, Joseph J., Captain, New York, Fort Bragg, N. C.
BREZIN, David, 1st Lieut., New York, Fort Bragg, N. C.
BRUNDAGE, Donald W., 1st Lieut., Binghamton, N. Y., Pine Camp, N. Y.
BURGER, Harold, 1st Lieut., Bronx, N. Y., Fort Bragg, N. C.
CIOFALO, Frank I., Captain, New York, Fort Benning, Ga.
CLAYMAN, Sigmund J., 1st Lieut., Forest Hills, L. I., N. Y., Camp Blanding, Fla.
CLYNE, Irving M., 1st Lieut., Far Rockaway, N. Y., Fort Monmouth, N. J.
COSTA, Joseph A., 1st Lieut., Bedford Hills, N. Y., Fort Jackson, S. C.
COYLE, Francis R., Captain, Buffalo, Pine Camp, N. Y.
DeGRACE, Francis H., 1st Lieut., Passaic, N. J., Camp Claiborne, La.
DERMON, Harry, 1st Lieut., New York, Camp Claiborne, La.
DEUTSCH, Nathan S., 1st Lieut., Plainfield, N. J., Fort Bragg, N. C.
DURYEA, Lyman C., 1st Lieut., New York, Pine Camp, N. Y.
ELKIND, Mortimer M., 1st Lieut., Brooklyn, Camp Croft, S. C.
FEITELL, Arthur, 1st Lieut., New York, Camp Livingston, La.
FINKEL, Milton M., 1st Lieut., Brooklyn, Camp Shelby, Miss.
FLICKER, David Jr., 1st Lieut., Kearney, N. J., Camp Blanding, Fla.
FRIEDMAN, Herbert S., 1st Lieut., New York, Fort Benning, Ga.
GALLER, Herman F., 1st Lieut., Brooklyn, Camp Claiborne, La.
GASNER, Walter G., 1st Lieut., Mount Vernon, N. Y., Mitchel Field, N. Y.
GILBERTSON, Robert L., 1st Lieut., Morrison, N. J., Pine Camp, N. Y.
GOLDBERG, Joseph D., 1st Lieut., New York, Fort Moultrie, S. C.
GURNEE, Quinby D., 1st Lieut., Hawthorne, N. J., Fort Monmouth, N. J.
JAMES, John T., 1st Lieut., Princeton, N. J., Fort Dix, N. J.
JOHNSON, Wallace M., 1st Lieut., Newark, N. J., Fort Benning, Ga.
KALAMARIDES, John J., 1st Lieut., Brooklyn, Fort Jackson, S. C.
KNOPF, Albert A., 1st Lieut., Jackson Heights, N. Y., Camp Stewart, Ga.
KRAKOWER, Irving, 1st Lieut., Brooklyn, Camp Blanding, Fla.
LEARN, Marshall L., 1st Lieut., Hamburg, N. Y., Camp Shelby, Miss.
LERNER, David L., 1st Lieut., New York, Camp Claiborne, La.
LOEB, Edward A., 1st Lieut., Atlantic City, N. J., Camp Blanding, Fla.
LONGWORTH, Edmund F., 1st Lieut., Pelham, N. Y., Camp Forrest, Tenn.
MacKENZIE, Locke L., 1st Lieut., New York, Fort Benning, Ga.
MAHONEY, Cornelius A., 1st Lieut., Forest Hills, N. Y., Camp Claiborne, La.
MAYERS, Albert N., 1st Lieut., New York, U. S. Army Recruiting Office, Albany, N. Y.
MINER, Walter A., 1st Lieut., Baldwin, L. I., N. Y., Camp Livingston, La.
MUSHABAC, Irving R., 1st Lieut., Bronx, N. Y., Camp Croft, S. C.
NIGHTINGALE, Arthur B., 1st Lieut., New Hyde Park, N. Y., Camp Livingston, La.
RACHLIN, Irving H., 1st Lieut., New York, Camp Shelby, Miss.
RAVITS, Everett C., 1st Lieut., Fairlawn, N. J., Fort Monmouth, N. J.
ROSENBERG, Harold W., 1st Lieut., New York, Camp Blanding, Fla.
ROTH, Daniel B., 1st Lieut., Bronx, N. Y., Fort Benning, Ga.
RUBIN, William, 1st Lieut., New Brunswick, N. J., Camp Claiborne, La.
SAFIR, Samuel S., 1st Lieut., Jackson Heights, N. Y., Camp Blanding, Fla.
SAMUEL, Jerome H., 1st Lieut., Newark, N. J., Fort Dix, N. J.
SATULSKY, Emanuel M., 1st Lieut., Elizabeth, N. J., Pine Camp, N. Y.
SCHULTZ, Jacob P., 1st Lieut., New York, Camp Shelby, Miss.
SHAPERO, Edward B., 1st Lieut., Brooklyn, Pine Camp, N. Y.
STEINREICH, Otto S., 1st Lieut., Newark, N. J., Fort Bragg, N. C.
WELTCHEK, Herbert, 1st Lieut., Elizabeth, N. J., Camp Claiborne, La.
WILLIAMS, George D., 1st Lieut., New York, Fort Bragg, N. C.
ZUKAUCKAS, Edward W., 1st Lieut., Brooklyn, Fort Dix, N. J.

FOURTH CORPS AREA

The following additional medical reserve corps officers have been ordered to active duty by the Commanding General, Fourth Corps Area, which comprises the states of Tennessee, North Carolina, South Carolina, Alabama, Georgia, Mississippi, Florida and Louisiana:

BENNETT, William M., Captain, Ruffin, S. C., Camp Wheeler, Ga.
EVANS, John W., Jr., 1st Lieut., Bells, Tenn., Camp Wheeler, Ga.
FINKELSTEIN, David J., Captain, Ridgeland, S. C., Fort McClellan, Ala.
HALL, James T., 1st Lieut., Memphis, Tenn., Camp Croft, S. C.
HOUSE, Nathaniel C., 1st Lieut., Belzoni, Miss., Mississippi Selective Service, Jackson, Miss.
IRWIN, Winston H., 1st Lieut., Birmingham, Ala., Fort Bragg, N. C.
JAMES, Lemuel P., Jr., 1st Lieut., Soperton, Ga., Fort Benning, Ga.
JOHNSON, Pearce S., 1st Lieut., New Orleans, Fort Oglethorpe, Ga.
JONES, Craig S., 1st Lieut., Cliffside, N. C., Camp Croft, S. C.
KOPFLER, Marion E., 1st Lieut., New Orleans. Camp Shelby, Miss.
MARCHBANKS, Vance H., Jr., 1st Lieut., Tuskegee, Ala., Fort Bragg, N. C.
MARTIN, Robert B., III, 1st Lieut., Cuthbert, Ga., Fort Oglethorpe, Ga.
MASTERSON, Rodney G., 1st Lieut., Alexandria, La., Camp Polk, La.
McLAURIN, James W., 1st Lieut., Baton Rouge, La., Fort Bragg, N. C.
McTURNAN, Robert W., 1st Lieut., Tampa, Fla., Stark General Hospital, Charleston, S. C.
PARSONS, Hugh E., 1st Lieut., Tampa, Fla., Camp Shelby, Miss.
ROWELL, John P., 1st Lieut., St. Petersburg, Fla., Fort Bragg, N. C.
STEGALL, Oscar B., 1st Lieut., Memphis, Tenn., Camp Wheeler, Ga.
STRONG, Robert A., Colonel, New Orleans, Headquarters 3d Military Area, New Orleans.
VAN HOOSER, John L., 1st Lieut., Smithville, Tenn., Fort Benning, Ga.
WAGNER, Rudolph T., 1st Lieut., Miami Beach, Fla., Fort Oglethorpe, Ga.
WARD, Thomas G., Captain, Thibodaux, La., Camp Wheeler, Ga.
WEAVER, Thomas S., 1st Lieut., Nashville, Tenn., Fort Bragg, N. C.
WORLEY, James H., 1st Lieut., Asheville, N. C., Fort Benning, Ga.
WRIGHT, Leonard D., 1st Lieut., Memphis, Tenn., Camp Claiborne, La.

SEVENTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Seventh Corps Area, which comprises the states of North Dakota, South Dakota, Minnesota, Nebraska, Iowa, Kansas, Missouri, Arkansas and Wyoming:

ANDERSON, Martin Frederick, 1st Lieut., Hastings, Neb., Carlisle Barracks, Pa. (1 Mo.) then to 42d Evacuation Hospital, Fort Leonard Wood, Mo.

ANDREWS, William Wallace, Jr., 1st Lieut., Kansas City, Kan., 4th Cavalry Brigade, Fort Riley, Kan.

ARBUCKLE, Millard Fillmore, Lieut. Col., St. Louis, Fort Leonard Wood, Mo.

BESS, George Calvin, Captain, St. Louis, 41st Division, Camp Murray, Wash.

BOLLER, Galen Charles, 1st Lieut., Traer, Iowa, Carlisle Barracks, Pa. (1 Mo.) then to 43d Engineers, Camp J. T. Robinson, Ark.

CAMPBELL, Louis Scott, 1st Lieut., Scottsbluff, Neb., 41st Division, Camp Murray, Wash.

CAPETTI, Alexander Pasquale, 1st Lieut., Crane, Mo., Fort Des Moines, Iowa.

CHALLED, Don Sheridan, 1st Lieut., Cedar Rapids, Iowa, 1st Medical Regiment, Fort Ord, Calif.

CORNELL, Dale Duane, 1st Lieut., Greenfield, Iowa, 41st Division, Camp Murray, Wash.

DOMINICK, DeWitt, 1st Lieut., Cody, Wyo., Carlisle Barracks, Pa. (1 Mo.) then to 74th Surgical Hospital, Fort Francis E. Warren, Wyo.

DONOHUE, Edmund Stephen, 1st Lieut., Sioux City, Iowa, Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

DREYER, William Francis, 1st Lieut., Webster Groves, Mo., Camp J. P. Robinson, Ark.

ELKINS, Ronald Flagg, 1st Lieut., Springfield, Mo., Fort Leonard Wood, Mo.

EVANS, Arthur Wilbur, 1st Lieut., Norton, Kan., Fort Leonard Wood, Mo.

FERGUSON, James Taylor, Jr., 1st Lieut., Kansas City, Mo., Fort Snelling, Minn.

FINNEY, Charles Herman, 1st Lieut., Fort Smith, Ark., Fort Snelling, Minn.

GALEOTA, William Richard, 1st Lieut., Maryville, Mo., Fort Snelling, Minn.

GAY, Ellery Clarke, Captain, Little Rock, Ark., C. A. S. C. Station Hospital, Fort Leonard Wood, Mo.

GILSDORF, Amos Ray, 1st Lieut., Dickinson, N. D., Fort Leonard Wood, Mo.

HAMILTON, Caldwell Kiskaddon, 1st Lieut., St. Louis, Mo., Fort Crook, Neb.

HANKINS, Charles Robert, 1st Lieut., Omaha, Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

HELLEWELL, Joseph Spencer, 1st Lieut., Evanston, Wyo., 217th General Hospital, Fort Riley, Kan.

HENRICH, Melvin Celsus, 1st Lieut., Riverton, Wyo., Fort Francis E. Warren, Wyo.

HOFFMAN, Jacob Samuel, 1st Lieut., Kansas City, Mo., Jefferson Barracks, Mo.

HOMAN, Richard William, 1st Lieut., Fort Meade, S. D., Fort Francis E. Warren, Wyo.

HYATT, Robert Fee, 1st Lieut., Monticello, Ark., 3d Cavalry Brigade, Fort Riley, Kan.

HYNDMAN, Henry Harold, 1st Lieut., Wichita, Kan., 3d Cavalry Brigade, Fort Riley, Kan.

KANE, Thomas Edward, 1st Lieut., Boone, Iowa, C. A. S. C. Station Hospital, Fort Leonard Wood, Mo.

KING, Jack Arthur, 1st Lieut., Elaine, Ark., Reception Center, Jefferson Barracks, Mo.

KNOLL, Albert Henry, Captain, Dubuque, Iowa, 41st Division, Camp Murray, Wash.

KOZBERG, Oscar, 1st Lieut., Moose Lake, Minn., Camp J. T. Robinson, Ark.

LINDBLOM, Alton Edwin, 1st Lieut., Minneapolis, Fort Crook, Neb.

MACK, Marvin Arnold, 1st Lieut., Crete, Neb., 35th Division, Camp J. T. Robinson, Ark.

MALLES, Albert Conrad, 1st Lieut., Lewisville, Ark., Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

MARTIN, Lee Fred, 1st Lieut., Talmage, Neb., Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

MATER, Dwight Albert, 1st Lieut., Knoxville, Iowa, Induction Station, Jefferson Barracks, Mo.

McDOWELL, Edward Alphonso, 1st Lieut., St. Louis, 4th Cavalry Brigade, Fort Riley, Kan.

McKINSTRY, Karl Virgil, 1st Lieut., DeSoto, Mo., 3d Cavalry Brigade, Fort Riley, Kan.

MOLLERS, Theodore Peter, 1st Lieut., Mountain Iron, Minn., Camp J. T. Robinson, Ark.

MURRAY, Robert Anthony, Captain, Aitkin, Minn., Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

NEUMAIER, Arthur, 1st Lieut., Lindstrom, Minn., 4th Armored Division, Pine Camp, Watertown, N. Y.

NIERLING, Richard DePuy, 1st Lieut., Jamestown, N. D., Jefferson Barracks, Mo.

NOONAN, William Joseph, 1st Lieut., Minneapolis, Fort Leonard Wood, Mo.

OMEYLA, Patrick Maynard, 1st Lieut., Sioux City, Iowa, 1st Medical Regiment, Fort Ord, Calif.

PALLETT, Harold Anthony, 1st Lieut., Kansas City, Mo., C. A. S. C. Station Hospital, Fort Leonard Wood, Mo.

PLATOU, Ralph Victor, 1st Lieut., Minneapolis, C. A. S. C. Station Hospital, Fort Leonard Wood, Mo.

PUTZ, Arthur Eugene, Captain, Edgewood, Iowa, Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

REID, James Armand, 1st Lieut., Kansas City, Kan., Fort Leavenworth, Kan.

RICHARDSON, Lyman King, Captain, Kansas City, Kan., Fort Leonard Wood, Mo.

ROSENTHAL, Leonard George, Captain, St. Louis, C. A. S. C. Station Hospital, Jefferson Barracks, Mo.

RUSSELL, Allen Rutledge, 1st Lieut., Pine Bluff, Ark., C. A. S. C. Station Hospital, Fort Riley, Kan.

SATTERFIELD, Benjamin W., 1st Lieut., St. Louis, 4th Cavalry Brigade, Fort Riley, Kan.

SAXE, Earl, 1st Lieut., Topeka, Kan., Jefferson Barracks, Mo.

SCANNELL, Raymond Christopher, 1st Lieut., Carroll, Iowa, Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

SHARPE, Don Carlyle, 1st Lieut., Dubuque, Iowa, Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

SHERRILL, Sion Frederick, 1st Lieut., Belle Fourche, S. D., 41st Division, Camp Murray, Wash.

SMRHA, James Albert, 1st Lieut., Cedar Rapids, Iowa, Engineer Replacement Center Infirmary, Fort Leonard Wood, Mo.

SNYDER, Glen Edgar, 1st Lieut., Grimes, Iowa, Carlisle Barracks, Pa. (1 Mo.) then to 214th General Hospital, Camp J. T. Robinson, Ark.

STEELE, Hugh Henderson, 1st Lieut., Deadwood, S. D., Carlisle Barracks, Pa. (1 Mo.) then to 214th General Hospital, Camp J. T. Robinson, Ark.

STRAUS, Maurice Lockhart, 1st Lieut., St. Paul, Minn., 41st Division, Camp Murray, Wash.

SWAILS, John Goldsborough, 1st Lieut., Wathena, Kan., Carlisle Barracks, Pa. (1 Mo.) then to 217th General Hospital, Fort Riley, Kan.

THORNELL, Harold Edgar (Negro), Captain, St. Louis, 4th Cavalry Brigade, Fort Riley, Kan.

EIGHTH CORPS AREA

The following additional medical reserve corps officers have been ordered to extended active duty by the Commanding General, Eighth Corps Area, which comprises the states of Colorado, Arizona, New Mexico, Oklahoma and Texas:

ADAMS, Richard Martin, 1st Lieut., Tulsa, Okla., Camp Wallace, Texas.

ANDERSON, Vetalis Vernon, 1st Lieut., Del Norte, Colo., 200th Coast Artillery, (AA) Fort Bliss, Texas.

ATKINS, Paul N., Jr., 1st Lieut., Muskogee, Okla., 52d Signal Battalion, Fort Sam Houston, Texas.

BASS, James W., Major, Dallas, Texas, 2d Division, Fort Sam Houston, Texas.

BELL, Robert H., Major, Columbus, Texas, Station Hospital, Camp Wallace, Texas.

BRADFORD, Sidney W., 1st Lieut., Tyler, Texas, 2d Division, Fort Sam Houston, Texas.

CARRITHERS, Clem Milburn, 1st Lieut., Bruni, Texas, 36th Division. Camp Bowie, Texas.

BOX, Otho N., Jr., 1st Lieut., Grandfield, Okla., 36th Division, Camp Bowie, Texas.

COHEN, Edmond F., 1st Lieut., Denver, Station Hospital, Fort Bliss, Texas.

COX, Arlo K., 1st Lieut., Watonga, Okla., 36th Division, Camp Bowie, Texas.

CRANE, Francis S., 1st Lieut., Wilburton, Okla., 1st Cavalry, Fort Bliss, Texas.

CULLYFORD, James S., 1st Lieut., Denver, Corps Area Laboratory, Fort Sam Houston, Texas.

DONOVAN, Mark Hamilton, 1st Lieut., Oklahoma City, Station Hospital, Fort Sill, Okla.

HARRIS, Gracchus, Jr., 1st Lieut., Navasota, Texas, 2d Division, Fort Sam Houston, Texas.

KELLY, Marcus G., 1st Lieut., Phoenix, Ariz., 2d Division, Fort Sam Houston, Texas.

LINDSEY, Ray Harvey, 1st Lieut., Pauls Valley, Okla., Camp Wallace, Texas.

MARTIN, John Dennis, 1st Lieut., Clint, Texas, Ellington Field, Texas.

MAYS, Alan Lanning, 1st Lieut., Sterling, Colo., Station Hospital, Fort Bliss, Texas.

ROBERTSON, David Lyle, 1st Lieut., Wichita Falls, Texas, Station Hospital, Camp Wallace, Texas.

RYAN, William Emmett, Captain, Midland, Texas, 2d Division, Fort Sam Houston, Texas.

SARZUNE, Benjamin, 1st Lieut., Eunice, N. M., 1st Cavalry Division. Fort Bliss, Texas.

SHERMAN, Joseph Harrison, 1st Lieut., Denver, Colo., 113th Cavalry, Camp Bowie, Texas.

SIPTAK, John E., 1st Lieut., Caldwell, Texas, 36th Division, Camp Bowie, Texas.

WALKER, John Hicks, 1st Lieut., Muskogee, Okla., Station Hospital, Fort Sill, Okla.

WILCOX, Melvin Rae, Jr., 1st Lieut., Jacksonville, Texas, Ellington Field, Texas.

WILLIAMS, Harold Murphy, 1st Lieut., Fort Worth, Texas, Camp Wallace, Texas.

WOODS, Haddon Benjamin, Captain, Refugio, Texas, 265th Coast Artillery, Fort Crockett, Texas.

NAVAL RESERVE OFFICERS ON ACTIVE DUTY

The following medical officers of the U. S. Naval Reserve have reported for active duty since March 17:

ARNOLD, Walter F., Lieut., M. C.-V. (S.), Long Beach, Calif., Naval Hospital, Mare Island, Calif.
BEHR, Irving S., Lieut. (j. g.), M. C.-V. (G.), Belleville, N. J., Norfolk Naval Hospital, Portsmouth, Va.
CREVELLO, Albert J., Lieut. (j. g.), M. C.-V. (S.), North Warren, Pa., U. S. Naval Hospital, Philadelphia.
DeSANTO, Dominic A., Lieut., M. C.-V. (S.), New York, Naval Hospital, Brooklyn.
FURMAN, Matthew R., Lieut., M. C.-V. (G.), New York, Third Naval District, New York.
KRAFT, George L., Lieut. (j. g.), M. C.-V. (G.), San Juan, P. R., 10th Naval District, San Juan, P. R.
MILAM, Ernest B., Lieut. Comdr., M. C.-V. (S.), Jacksonville, Fla., Naval Air Station, Jacksonville, Fla.
MILLER, Julius Y., Lieut. (j. g.), M. C.-V. (G.), Chelsea, Mass., Naval Training Station, Newport, R. I.
PORTER, Joseph I., Lieut. Comdr., M. C.-V. (G.), Benicia, Calif., 2d Marine Division, Marine Corps Base, San Diego, Calif.
RABSON, Salem M., Lieut. Comdr., M. C.-V. (S.), New York, Naval Hospital, Brooklyn
ROSENBERG, Irving G., Lieut. (j. g.), M. C.-V. (S.), Long Beach, Calif., Naval Dispensary, Long Beach, Calif.
SLAGLE, Thomas D., Lieut., M. C.-V. (S.), San Juan, P. R., 10th Naval District, San Juan, P. R.
SULLIVAN, Daniel F., Jr., Lieut., M. C.-V. (S.), Woodland, Calif., Naval Dispensary, Long Beach, Calif.
WEST, Walter B., Lieut., M. C.-V. (S), Fort Worth, Texas, Naval Air Station, Corpus Christi, Texas.
WILLIAMS, Richard J., Lieut. (j. g.), M. C.-V. (G.), Cumberland, Md., Destroyer Division 21.

SELECTIONS FOR PROMOTION IN THE NAVY

A Naval Medical Corps Selection Board has made recommendations for promotion as vacancies occur of forty-two lieutenants to the grade of lieutenant commander and fifty-one lieutenants (junior grade) to the grade of lieutenant, and the recommendations of the board have been approved by President Roosevelt. The Navy Medical Selection Board, of which Capt. Richard A. Warner, M. C., U. S. Navy, was president, selected the following officers for promotion:

LIEUTENANTS TO LIEUTENANT COMMANDER

Irving J. Warmolts	Warren E. Klein
Otto L. Burton	Norris M. Hardisty
Louis E. Gilje	Cameron L. Hogan
O. Henry Alexander	Gerard B. Creagh
Herman A. Gross	Anselm C. Hohn
Edward S. Lowe	Thomas Q. Harbour
Robert J. Vaughn	James G. Neff
Frank P. Gilmore	Craig B. Johnson
Paul Vaughan	Clarence L. Blew
Oscar D. Yarbrough	Herbert G. Shepler
Carr E. Bentel	William P. Stephens
James D. Boone	Jack R. George
Warren G. Wieand	Ferrell H. Johnson
Albert R. Behnke Jr.	Edward C. Kenney
Omar J. Brown	John D. Foley
George W. Dickinson	Garland A. Gray
John R. Weisser	Benjamin N. Ahl
Kenneth H. Vinnedge	Charles M. Parker
Milton R. Wirthlin	James R. Sayers
Thenton D. Boaz	William C. Baty Jr.
William L. Berkley	Wade S. Rizk

LIEUTENANTS (J. G.) TO LIEUTENANTS

John F. McMullin	Philip J. McNamara
James B. Shuler	Edward E. Hogan
John F. Foertner	Merrill H. Goodwin
Gordon M. Perisho	LeRoy J. Barnes
Jerome F. Smith	Landes H. Bell
Robert S. Poos	Thomas J. Canty
Francis L. Phillips	Clifford P. Phoebus
John L. Hatch	Richard W. Garrity
Charles F. LeComte	Russell H. Walker
Gordon K. Lambert	William S. Francis
Walter Welham	Ellwood V. Boger
Herbert H. Eighmy	Shakeeb Ede
Richard R. Rall	Charles F. Gell
Thomas Ferwerda	Alexander S. Angel
Stephen J. Ryan	Samuel J. Wisler
James G. Bulgrin	Joseph A. Syslo
Emmanuel Rollins	Nicholas E. Dobos
Roy R. Powell	Arthur L. Lawler
Murray W. Ballenger	Charles F. McCaffrey
Clark J. Jeffers	Alfred L. Smith
Thomas P. Connelly	Marion E. Roudebush
Marion T. Yates	Edward Patrick McLarney
Marshall Cohen	Earle E. Metcalfe
Eugene P. Harris	Jefferson Davis
Harold R. Berk	Joseph M. Hanner
Walter R. Miller	

AVIATION MEDICAL EXAMINERS

A routine course of instruction to qualify medical officers for duty as Aviation Medical Examiners began at the School of Aviation Medicine, Randolph Field, Texas, April 14. The course will continue for six weeks. The names of the officers enrolled, with the stations to which they are assigned, follow:

AUERBACH, Sidney, 1st Lieut., M. C. R., Fort Jackson, S. C.
BENNETT, Bruce H., 1st Lieut., M. C. R., Mitchel Field, N. Y.
BOSWORTH, Joseph M., Jr., Captain, M. C., Florida N. G., Camp Blanding, Fla.
CRAWFORD, Walter J., 1st Lieut., M. C. R., Camp Shelby, Miss.
DANIELS, John Q. A., Captain, M. C. R., McChord Field, Wash.
DICKINSON, Louis E., 1st Lieut., M. C. R., Fort Douglas, Utah.
DOMINICK, John F., 1st Lieut., M. C. R., Randolph Field, Texas.
DRUMMOND, N. Robert, 1st Lieut., M. C. R., Randolph Field, Texas.
DUDNEY, Lester R., 1st Lieut., M. C. R., Randolph Field, Texas.
ENGELHARDT, David M., 1st Lieut., M. C. R., Allan Hancock College of Aeronautics, Santa Maria, Calif.
EPSTEIN, Ernest D., 1st Lieut., M. C. R., Chanute Field, Ill.
ERDEL, Milton W., Captain, M. C. R., Fort Benning, Ga.
ESTES, Woodrow B., 1st Lieut., M. C. R., MacDill Field, Fla.
FERRIS, James W., Captain, M. C. R., Camp Livingston, La.
FLEMING, Frank R., Captain, M. C. R., Fort Jackson, S. C.
FLORETH, Nelson K., 1st Lieut., M. C. R., Camp Beauregard, La.
FOSTER, Furman L., 1st Lieut., M. C. R., Randolph Field, Texas.
FRENCH, James B., 1st Lieut., M. C. R., Randolph Field, Texas.
GIFFORD, Byron L., Captain, M. C. R., Camp Murray, Wash.
GORDON, Devitt L., 1st Lieut., M. C. R., Patterson Field, Ohio.
GRAYSON, Morris, 1st Lieut., M. C. R., Langley Field, Va.
HELLAMS, Alfred A., 1st Lieut., M. C. R., Fort Sam Houston, Texas.
HENRY, Lewis M., Captain, M. C. R., Fort Sill, Okla.
HOLTZ, Paul R., Major, M. C. R., Fort Leavenworth, Kan.
HOWE, George E., 1st Lieut., M. C. R., Headquarters 6th Corps Area, Chicago.
KELLY, Delbert C., 1st Lieut., M. C. R., Selfridge Field, Mich.
KING, James T., 1st Lieut., M. C. R., Barksdale Field, La.
KNAPP, Howard C., Captain, M. C. R., Fort Sam Houston, Texas.
KOSSMANN, C. E., 1st Lieut., M. C. R., Randolph Field, Texas.
LASKY, Mortimer, Major, M. C., New York N. G., Madison Barracks, N. Y.
LIPIN, Raymond J., 1st Lieut., M. C. R., Langley Field, Va.
LOWREY, Robert W., 1st Lieut., M. C. R., Brooks Field, Texas.
LUCAS, Richard A., 1st Lieut., M. C., Louisiana N. G., New Orleans.
MAGRUDER, Roger G., Captain, M. C. R., Langley Field, Va.
MENDEL, Charles L., 1st Lieut., M. C. R., Randolph Field, Texas.
POMERANCE, Joseph B., Captain, M. C. R., Camp Beauregard, La.
POPELAR, Melville V., Captain, M. C. R., Fort Sill, Okla.
RICKLES, George Abraham, 1st Lieut., M. C. R., McChord Field, Wash.
SANDERS, Zal H., 1st Lieut., M. C. R., Scott Field, Ill.
SARFATTY, Isaac J., Captain, M. C. R., Milwaukee.
SELIGMAN, Ewing, Captain, M. C. R., Camp Shelby, Miss.
SMITH, Tom J., 1st Lieut., M. C. R., Scott Field, Ill.
THOMPSON, Roger S., Captain, M. C. R., Camp Murray, Wash.
TILDEN, James F., 1st Lieut., M. C. R., Fort Sam Houston, Texas.
WALDOCK, James L., Captain, M. C. R., Fort Benning, Ga.
WHITE, Fletcher H., 1st Lieut., M. C. R., Mitchel Field, N. Y.

ADVISORY BOARD FOR SELECTIVE SERVICE

A medical advisory council has been created to cooperate with national headquarters of the Selective Service system on problems connected with the physical examinations of registrants, it was announced March 31. Members of the council are:

Dr. Francis X. McGovern, Washington, D. C., chairman of the executive board of the Medical Society of the District of Columbia.

Dr. Henry C. Macatee, Washington, D. C., past president of the District society.

Dr. Thomas S. Cullen, professor emeritus of gynecology, Johns Hopkins University School of Medicine, Baltimore, and a Trustee of the American Medical Association.

Dr. Harvey B. Stone, associate professor of surgery at Johns Hopkins.

Dr. Robert A. Bier, secretary of the Medical Advisory Council and liaison officer between the council and national headquarters, Selective Service system.

Mr. Theodore Wiprud, executive secretary of the District society.

The purpose of the council is to provide liaison between national headquarters of the Selective Service system, the American Medical Association and the medical profession at large and to acquaint them with the medical needs for the most effective administration of the Selective Service system. A primary need is the obtaining of suitable medical personnel for the examination of registrants. At the first meeting of the council, April 1, various proposed plans for the correction of physical defects of rejected registrants were considered.

MEDICAL REPLACEMENT TRAINING CENTER AT CAMP GRANT, ILLINOIS

After months of preliminary work, a tremendous program of training Medical Department enlisted personnel at Camp Grant, Illinois, has been launched, and at present more than six thousand Medical Department trainees are undergoing intensive training. During the coming year about thirty thousand enlisted men will be trained there. Each training period covers thirteen weeks in the replacement center. After receiving training, which is mostly basic in character, the trainees will be assigned to field medical organizations and fixed hospitals in camps elsewhere.

Construction of the replacement training center is complete and about two hundred and fifty buildings of semipermanent type are now in use. The trainees are organized into seven battalions, two of which will train men for assignment to fixed hospitals, one for service with mobile hospitals, another for service with the Air Corps, another for service as attached medical troops and with veterinary hospitals, and two for service as army medical regiments.

Each battalion is organized into four companies, each of which has the capacity to house and train two hundred and twenty-two selectees. The training schedule provides for forty-four hours of instruction each week for the thirteen weeks period. It includes, among many other subjects, twenty-one of training in elementary anatomy and physiology, twenty hours in field sanitation, twelve hours in material medica and pharmacy, sixteen hours in medical and surgical nursing, sixty-seven hours in bandaging, dressing and splinting, eight hours in the treatment of gas casualties, ten hours in ambulance loading and litter drill, and five hours in preparation of field medical records; one hundred and twenty-two hours of unit training will complete the course.

In addition, schools for bakers and cooks, mess sergeants, clerks, chauffeurs and motor mechanics are being conducted.

At present the headquarters administrative staff consists of:

Lieut. Col. Joseph I. Martin, M. C., executive officer.
Lieut. Col. Frank E. Brundage, M. R. C., assistant executive officer.
Lieut. Col. A. B. Crane, A. G. D., adjutant.
Major John F. Bohlender, M. C., plans and training officer.
Major Lynn Dodge, M. R. C., assistant plans and training officer.
Capt. Roland B. Peck, Inf., classification officer.
First Lieut. J. B. Pierce, A. G. D., personnel officer.

The battalion commanders are:

Lieut. Col. Thomas Harold Reagan, M. C.
Lieut. Col. William Alexander Smith, M. C.
Lieut. Col. George E. Lindow, M. C.
Major Howland A. Gibson, M. C.
Major Howard S. McConkie, M. C.
Major Clement F. St. John, M. C.
Major Frederic B. Westervelt, M. C.

In addition to these officers there are approximately one hundred and seventy-five others assigned to the various companies in the center.

It is expected in the near future that a brigadier general will be assigned as commanding general of the training center.

MEDICAL SUPPLIES FOR COUNTRIES AT WAR

Medical service equipment for new clinical laboratories and hospitals throughout England has been requested by the British Red Cross in a cable forwarded by the American Red Cross to the Medical and Surgical Relief Committee of America, which has headquarters at 420 Lexington Avenue, New York. The committee is soliciting contributions of about sixty specific items, including pipets, tubes, burets, Petri dishes, dissecting needles, bottles, glass tubing and syringes. In the first quarter of 1941 this committee disclosed that contributions in cash and medical and surgical supplies received amounted to $97,168.56. Of this amount $79,156.67 in the form of drugs, surgical instruments and other medical supplies were shipped overseas for civilian relief among noncombatants in Great Britain and the allied countries. The committee, formerly known as the Medical and Surgical Supply Committee of America, recently changed its name to emphasize the charitable nature of its work.

INDUSTRIAL SURVEYS IN DEFENSE PROGRAM

The Maryland State Department of Health has inaugurated a series of surveys on health and occupational hazards in industrial defense plants as part of the national defense movement in cooperation with the U. S. Public Health Service. Dr. Robert H. Flinn, Bethesda, assistant surgeon, and Harry E. Seifert, assistant public health engineer of the Public Health Service, have been assigned to supervise the work. Wherever necessary, follow-up studies will be made to determine concentrations of hazardous dusts, fumes and gases in the workroom air or other health hazards and their effects on the workers, it was reported. Special efforts will be made to provide technical advice and services to plants too small to afford medical and engineering personnel. Surveys have already been started at several plants.

CONFERENCE OF PSYCHIATRISTS

Psychiatrists connected with medical advisory and army induction boards in New York held a conference at the New York Academy of Medicine, April 5. The speakers included Col. Patrick S. Madigan, M. C., U. S. Army; Dr. Harry Stack Sullivan, president of the William Alanson White Psychiatric Foundation; Dr. Martin J. Cooley of the Veterans' Administration; Dr. Karl M. Bowman, director of the psychiatric division of Bellevue Hospital; Dr. Howard W. Potter, clinical professor of neurology and psychiatry, Long Island College of Medicine, and Col. Samuel J. Kopetzky, chief of the medical division of the New York Selective Service System.

NEW MEDICAL RELIEF COMMITTEE

Organization of the Physicians' Committee of Greater New York as a branch of the British War Relief Society was announced, April 14, following a meeting at the New York Academy of Medicine. Officers of the committee are Drs. Adolph G. G. De Sanctis, chairman; Nathan B. Van Etten, John E. Jennings, Charles Gordon Heyd, Harry P. Mencken and Herbert A. J. Cochrane, vice chairmen for the five counties in Greater New York; Benjamin Wallace Hamilton, secretary, and Kirby Dwight, treasurer.

MEDICAL TECHNOLOGISTS

A reserve of medical technologists, both men and women, is being built up by the War Department with the cooperation of the American Red Cross. As of February 1 a total of two thousand and seventy-two civilian medical technologists had been enrolled by the Red Cross as a reserve for the Army Medical Corps to supplement the several thousand enlisted medical technicians already on duty.

NEW HOSPITALS IN CANAL ZONE

Two of the largest single unit type hospitals ever built in the Panama Canal Zone have been started at Fort Clayton and Fort Gulick. Both hospitals will be fireproofed, equipped with the latest hospital accessories, and supplemented by barracks and officers' and nurses' quarters.

SYMPOSIUM ON MILITARY MEDICINE

The St. Louis Medical Society devoted its April 15 meeting to a symposium on military medicine. Organization was discussed by Dr. Fred T. Murphy, Grosse Pointe, Mich.; the surgical aspects by Dr. Malvern B. Clopton; medical, Dr. Walter Fischel, and roentgenologic, Dr. Edwin C. Ernst.

MEETING AT ARMY MEDICAL CENTER

Dr. Ferris Smith, Grand Rapids, Mich., addressed the U. S. Army Medical Department officers in Washington and vicinity at the Army Medical Center, April 21, on "An Obligation to the Soldier and to Society."

ORGANIZATION SECTION

AMERICAN MEDICAL ASSOCIATION ON TRIAL

THE TRIAL OF THE CASE OF THE UNITED STATES OF AMERICA

VS.

THE AMERICAN MEDICAL ASSOCIATION, A CORPORATION, THE MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA, A CORPORATION, THE HARRIS COUNTY MEDICAL SOCIETY, AN ASSOCIATION, THE WASHINGTON ACADEMY OF SURGERY, AN ASSOCIATION, ARTHUR CARLISLE CHRISTIE, COURSEN BAXTER CONKLIN, JAMES BAYARD GREGG CUSTIS, WILLIAM DICK CUTTER, MORRIS FISHBEIN, THOMAS ALLEN GROOVER (DECEASED), ROBERT ARTHUR HOOE, ROSCO GENUNG LELAND, THOMAS ERNEST MATTINGLY, LEON ALPHONSE MARTEL, FRANCIS XAVIER MCGOVERN, THOMAS EDWIN NEILL, EDWARD HIRAM REEDE, WILLIAM MERCER SPRIGG, WILLIAM JOSEPH STANTON, JOHN OGLE WARFIELD JR., OLIN WEST, PRENTISS WILLSON, WILLIAM CREIGHTON WOODWARD, WALLACE MASON YATER, JOSEPH ROGERS YOUNG.

(Continued from page 1975)

MARCH 26—MORNING

The Court ruled that the Dr. Trinder manuscript was inadmissible.

TESTIMONY OF DR. PRENTISS WILLSON
DIRECT EXAMINATION

By Mr. Laskey:

Prentiss Willson said he is a physician, he graduated in 1905. He is 59 years old. He graduated from Georgetown University. He was in the Army, during the last war, and in 1919 when he left the Service he specialized in obstetrics and gynecology. He is Attending Obstetrician in the Columbia Hospital for Women. He joined the District of Columbia Medical Society in 1908, and became much interested in it and its affairs shortly after that time. He was corresponding secretary for a time, served as chairman of the Committee of Censors, served several terms on the Executive Committee. He was chairman of the Executive Committee several times. He was chairman for a time of the Committee on Medical Economics of the Medical Society, some five or six years ago, and finally in 1933 was elected president of the Society and took office the first of July for the fiscal year of 1933-1934. It was the custom of the Society to elect the retiring president as a member of the Executive Committee for a term of three years. He was a member of the board of the Health Security Administration and the Medical-Dental Service Bureau, which were eleemosynary institutions which the Medical Society had a part in forming.

Q.—With reference to a change in the constitution or by-laws, what is the procedure with reference to them? *A.*—A member who wishes to attempt to have a constitutional change made or propose an amendment to the constitution, must propose it at a certain stated meeting, and then, under the provisions of the constitution, that proposed amendment is referred to the Executive Committee and the Executive Committee is obligated to make a report concerning it at the next ensuing stated meeting of the Society, either recommending its adoption or recommending adversely to its adoption.

Q.—What knowledge have you of Chapter 9, Article 4, Section 5? *A.*—As to its history in the Society?

Q.—Yes. *A.*—That particular amendment to the constitution which was denominated Chapter 9, Article 4, Section 5, was first proposed to the Society at the meeting in November—

Q.—Before you start on that, Doctor, would you identify it a little more particularly, with respect to its substance? It is in evidence, I understand. *A.*—Its substance was—its purpose, rather, I know was to afford the Society better facilities for controlling the practice of its members in relation to the Workmen's Compensation Law.

Q.—Will you proceed with its history? *A.*—It was first proposed before the Medical Society at the stated meeting in November, which would be the first meeting in November 1935.

THE COURT:—I imagine the jury will remember it, but I think it is well to identify its terms just in a general way so that the jury will know exactly what you are talking about.

The Witness:—If your Honor please, I can read it.

THE COURT:—Have you got it handy?

Mr. Laskey:—Yes, sir.

THE COURT:—I would like the jury to understand it. I dare say they will remember it.

Mr. Laskey:—Following your Honor's suggestion I will read to the ladies and gentlemen of the jury Section 5:

"No member of the Society shall engage in any professional capacity whatsoever with any organization, group, or individual, by whatever name called or however organized, engaged in the practice of medicine within the District of Columbia or within ten miles thereof, which has not been approved by the Society. The Executive Committee is authorized and directed to prepare an approved list of organizations, groups, and individuals, by whatever name called and however organized, engaged in the practice of medicine within the District of Columbia or within ten miles thereof, and the same shall be kept in the office of the secretary-treasurer. Before any such organization, group, or individual can be placed on the approved list of the Society, such organization, group, or individual, or the member of the Society proposing professional relations therewith shall submit to the Compensation, Contract and Industrial Medicine Committee such evidence as the Committee or the Society may require concerning the character, activities, financial condition and ethical standards of said organization, group, or individual, and after considering the same said committee shall make a report of the investigation and findings to the Executive Committee for such action as it may deem necessary."

By Mr. Laskey:

Q.—Now, with that so identified, will you please proceed to give us the history of it? *A.*—In its original form the amendment was proposed at the stated meeting of the Society on the first Wednesday in November 1935. Under the provisions of the constitution it was referred to the Executive Committee for report at the next stated meeting, which would be the stated meeting in January. At that time I was a member of the Executive Committee to which this proposed amendment was referred, and the amendment was given consideration in the Executive Committee and was vigorously opposed, so far as its adoption in the constitution was concerned, by a group of that committee, of which I was one, and the Executive Committee reported it to the Society at the stated meeting on the first Wednesday in January 1936 adversely. Despite that adverse recommendation of the Executive Committee the Society adopted it, so that it became a part of the constitution in January 1936, for the first time. Its proponents then realized that there was not proper machinery in the constitution to effect the purposes of the amendment which had just been adopted, and at the stated meeting of the Society in March 1936, two months after its adoption, another amendment was proposed. I cannot give you the exact chapter and article, but another amendment was proposed to the constitution to put into it machinery to make effective the provisions of the amendment which had been adopted. At the same meeting in March 1936, an ex-president of the Society, Dr. A. B. Bennett, proposed a further amendment to the constitution, to strike out Chapter 9, Article 4, Section 5, which had just been adopted two months before; and under the provisions of the constitution those two amendments were referred again to the Executive Committee. The Executive Committee met, I still being a member of it, and the matter of the attitude of the Executive Committee toward this original amendment and these two new amendments was referred to a subcommittee of the Executive Committee of three to prepare a report for the consideration of the Executive Committee to submit to the Society, with its reasons for any action it might see fit to take. That committee consisted of myself, Dr. Bennett, and Dr. Don Johnson, I believe, who had a legal degree in addition to his medical degree. The subcom-

mittee met and gave careful consideration to the two amendments, the one striking out the one that had just been adopted, and the enabling amendment to provide machinery to make it operative, and prepared a formal statement of its reasons for the position it recommended the Executive Committee taking, and recommended that the amendment to strike out Chapter 9, Article 4, Section 5, be adopted, and that the proposed amendment to provide machinery to make it operative be not adopted. That was the action of the subcommittee. The report of the subcommittee was brought to the attention of the Executive Committee and it was adopted by the Executive Committee for recommendation to the Society with a further amendment which was offered in the full committee to the effect that the whole matter, after it had adopted the recommendation of the committee that the new amendment be not adopted and the old one be stricken out again, be referred to a special committee of the Society for study during the coming summer. That special committee was to consist of the president of the Society, who was elected to take office on July 1, 1936, the chairman of the Executive Committee, the chairman of the Compensation, Contract and Industrial Medicine Committee, which you have heard mentioned, the counsellor of the Society, who was Colonel Frederick A. Fenning, and two attorneys who were in practice at the local bar. These gentlemen were nominated to the Executive Committee and the Executive Committee was to elect.

Q.—Was that done, with reference to the two attorneys?

Mr. Lewin:—We object to that, if your Honor please. It does not matter whether it was done or not. It is perfectly immaterial.

The Court:—Objection overruled. The witness is giving the history of the matter.

The Witness:—Following the usual constitutional procedure, this recommendation of the Executive Committee which I have just outlined to the jury was brought into a full meeting of the Society and my impression is now that it was the latter part of May, because I think that the stated meeting that year had been postponed because of the fact that the Society was holding its annual scientific session early in the month. My impression is that it was on—it doesn't make any difference, I suppose. It was brought in before a meeting of the full society in May. The action of the Society was to again overrule the recommendation of the Executive Committee in that it refused to strike out Chapter 9, Section 4, Article 5. It did adopt the new proposed amendment which was to provide machinery for its operation, but it then also adopted the suggestion of the Executive Committee that the whole matter be referred to a committee such as I have outlined, for study during the summer, and report to the Society in the fall. After the July change of office in the Society the committee was organized. It consisted of Dr. William Mercer Sprigg, ex officio as president of the Society, Dr. J. Lawn Thompson, ex officio, as chairman of the Executive Committee, Dr. R. Arthur Hooe, ex officio, as chairman of the C. C. and I. M. Committee, Colonel Frederick A. Fenning as counsellor of the Society and, under the provision of the action of the Society this group nominated Mr.—I can't give the first name—Mr. Wheatley and Mr. Flannery.

Mr. Lewin:—May I break in simply to ask the witness to fix the time. Are you not talking about the year 1936?

The Witness:—Yes, Mr. Lewin; 1936. Those nominations were made to the Executive Committee and agreed to, so that that was the personnel of the committee which was to study this whole subject. As I recall it, the subject for study was the relations of the Society to its members engaged in contract practice under the Workmen's Compensation Law, and the best method of controlling that practice to make it conform to the ethics of the local organization and the American Medical Association. The committee studied the matter during the summer.

I might say, Mr. Laskey, there—I think this is as good a place to bring it in as any—that because of serious differences of opinion in the Society and in the Executive Committee centering somewhat around this matter that I am discussing now and somewhat regarding other matters, that at the meeting of the Society on April 22, 1936 I resigned from the Executive Committee and from every other position and office I held in connection with the Society, although my resignation did not take effect until the first of the following May. I attended one meeting of the Executive Committee after that resignation. So that after the first part of May 1936, although my elective term on the Executive Committee had 14 months yet to run, the term for which I was elected, I resigned from the committee and not only from that, but from every office I held in the Society. Therefore I had nothing to do with the deliberations of this committee or with its activities or with the activities of the Executive Committee with respect to it, following the first part of May 1936.

The committee gave the matter consideration during the summer, and at the meeting of the Society in October 1936 it merely made a progress report and asked for more time to give the matter further consideration. That was granted by the Society, and at the stated meeting of the Society, as I recall it, in November 1936, the committee, the composition of which I have just given you, made its final report to the Society in which it suggested certain minor modifications in Chapter 9, Article 4, Section 5 which then had been in the constitution since the preceding January.

That report of the committee was received and given the status of the first reading of a proposed amendment, because it did make certain minor changes in the wording of Chapter 9, Article 4, Section 5. It was given the status of a proposed amendment, and at the meeting of the Medical Society, the stated meeting, in January, the matter came up. In the meantime there had been proposed, as I recall it now, some further minor modifications in the wording of the amendment, and the action of the Society was to return it to the committee, I believe, with instructions to consult the legal counsel further, and the matter finally came up before the Medical Society at the stated meeting on the first of March 1936, and it was then adopted.

By Mr. Laskey:

Q.—By the first of March, do you mean the first day of March? *A.*—I mean the first stated meeting, on the first Wednesday in March 1937.

Q.—When adopted was it in the form that I have just read to the jury? *A.*—My impression is that it was in the form that you read to the jury, and it was, so far as my understanding of its wording is concerned, the only minor modifications which had ever been introduced into that provision of the constitution which first went into the constitution of the Medical Society on the first Wednesday in January 1936, and had been in the constitution continuously for 14 months before action by the Society in March 1937. It had been in the constitution in that form for 14 months.

Q.—There was nothing done with Chapter 9, Article 4, Section 5 after its final adoption, was there? *A.*—So far as I know, it has never been touched since then. I might say, as I told the jury, I was opposed to the original amendment. I fought it in the Executive Committee. I signed every adverse report that was made concerning it. I was in favor of its being stricken out of the constitution, every time it came up. If my recollection serves me correctly there were three different occasions on which amendments were proposed to strike it out of the constitution, and I voted for approval of them, and I continued to oppose it up to the time of its final adoption in March 1937.

Q.—When did you first hear of G. H. A.? *A.*—From my own memory I cannot fix the date definitely, although it can be fixed for me in the testimony, because it was upon the occasion of the meeting in Dr. William Gerry Morgan's office to which reference has been made, if you can give me that date.

Q.—It was the last part of May, was it not?

Mr. Kelleher:—May 16, 1937?

The Witness:—May 16, 1937. To the best of my recollection and belief, that is the first occasion on which I ever heard of such an organization as the G. H. A. even being contemplated.

By Mr. Laskey:

Q.—Did the introduction of the amendment and the final passage in its present form, of Chapter 9, Article 4, Section 5, have anything to do with G. H. A.? *A.*—Obviously not, because it was in the constitution 14 months before March 1937. I never heard of the G. H. A. until May 1937. So there is almost 18 months that it was in the constitution before I ever heard of G. H. A.

Q.—Do you recall a letter introduced by Dr. Sprigg which was proposed to be sent to the hospitals, in the fall of 1937? *A.*—Very well. Dr. Sprigg first proposed sending that letter at a meeting of the Society in October, I think, around the middle of the month of October 1937.

Q.—Was it acted upon at that meeting? *A.*—It was not acted upon at that meeting, because Dr. Groover made the point that it was entirely too important a matter for the Society to take action on prior to all the members of the Society having been notified that the matter was coming up, so that anybody who was interested in it, either for or against it, might be present to express his views and to vote. And that was the action of the Society. So that the letter which Dr. Sprigg proposed sending to the boards of directors of the various local hospitals went over and became a matter on the agenda. As I recall it, it was definitely postponed for consideration until the stated meeting on the first Wednesday in November following.

By Mr. Laskey:

Q.—Did you attend that meeting on Nov. 3, 1937? *A.*—I certainly did.

Q.—Do you recall what you did prior to going to the meeting and how you happened to do it? *A.*—That is, of course, in connection with this proposed letter to the boards of directors of the various hospitals, and I should like to give the details of that to the members of the jury as clearly as I possibly can.

Mr. Laskey:—It has been suggested by Mr. Richardson that I read the Sprigg letter. I am going to ask Mr. Richardson to read it for me.

Mr. Richardson: — Dr. Sprigg read the following letter addressed to the boards of directors of the various hospitals in this city:

"The Medical Society of the District of Columbia desires to call attention to Chapter 9, Article 4, Section 5 of the constitution, as follows"—

Then follows in the letter the same section 5 which Mr. Laskey just read to the jury. Then follows this:

"Whereas the Medical Society is using its earnest efforts to give to the people of the District of Columbia the most advanced and best possible medical care, we therefore ask your cooperation by aiding us to carry out this principle. In view of the above section of the constitution of the Medical Society of the District of Columbia we hope your board will see the advisability of making such reservations in your hospital so that it may be in accord with and support our efforts."

Mr. Kelleher:—Does not that letter also quote Chapter 9, Article 4, Section 1?

Mr. Richardson:—The copy I had did not differentiate. Here is also a portion of it:

"Members shall not accept appointment to or continue to serve upon the medical staff of any hospital or dispensary which is not approved by the Society. A list of approved hospitals and dispensaries shall be available in the Society's office."

By Mr. Laskey:

Q.—Now, with respect to that letter, was it on the agenda for action on Nov. 3, 1937? *A.*—It was.

Q.—My last question, I think, asked you to state what, if anything, you did with respect to that meeting; what you did before you got there. *A.*—At that time,, that is, the fall of 1937, I had office hours three afternoons a week, Mondays, Wednesdays and Fridays. It was my invariable custom, almost, to complete my office hours, so I got through late in the afternoon on Wednesday. I was living pretty well out in the suburbs, and I usually dined in town with my friend Dr. Hough whom I had known for many years and who shared my office. We used to go to Harvey's for dinner and attend the meetings of the Medical Society. On this particular Wednesday afternoon of Nov. 3, 1937 I got through with my last patient somewhat after 5 o'clock in the afternoon. In the meantime, to the best of my recollection and belief, I had even forgotten that the Sprigg letter was coming up. But when I got through with my last patient I picked up the mimeographed notice of the meeting for the Medical Society that night to see what was the business that was to come before the Society, and I read many other items that were up for discussion with the proposal of Dr. Sprigg to send this letter to the boards of directors of the various hospitals which also would come up for action, as has just been called to your attention through the reading of Chapter 9, Article 4, Section 5. The letter was calling the attention of the boards of directors to this particular provision of the constitution which, as I have testified previously, I had always been opposed to. The thought suddenly sprung into my mind, Would it be possible to take any action at the Society on this night which would prevent the sending of that letter? And I pulled a piece of scratch paper over toward me and picked up a pencil, without consulting with anybody in the world, and on the spur of the moment I scratched down this resolution which was introduced that night which has been read to you several times and which on its face shows that it was very crudely and carelessly drawn. I then may have taken that pencil draft across through my waiting room to Dr. Hough's office, which was on the other side of the office, in the same suite. I may have shown it to him. I have no distinct recollection of that. I want to be absolutely honest about it. I may have shown it to him, or I may not have shown it to him until we had dinner together that night. In any event, I had my secretary type it. It was then almost six o'clock, and I had her call Dr. Christie's office, which was two blocks from me, to see if he was still in the building, because I knew that Dr. Christie was also opposed, as I was, to the sending of that letter. I found that he was still in his office, and I walked over to 1835 I Street, two blocks from my office, and saw Dr. Christie. I asked him if he was opposed to the sending of the letter, and he said he was. I asked him if he would second this resolution. First, I asked him if he thought the resolution as drawn might prevent the sending of the letter. He said he thought it might, and I asked him if he would be willing to second it, and he said he would. I then returned to my office and met Dr. Hough and we went to Harvey's for dinner and I went to the Medical Society that night.

At the meeting that night there was a further recommendation, among much other business, brought in from the Executive Committee which it seemed to me was proposing action along the same line as this letter; and I arose and asked if the proposal of the Executive Committee were in lieu of the proposed letter. As far as the record goes, as I have seen it, there was no answer to that question. But, in any event, I immediately proposed this resolution.

Q.—Prior to the proposing of that resolution by you at the meeting of the Society that night, what, if anything, did Dr. Stanton do? Do you remember the Stanton resolution? *A.*—Yes. There was a resolution introduced by Dr. Stanton, but it had nothing to do with this particular matter. That was another matter.

Q.—Proceed. *A.*—You want me to discuss the resolution?

Q.—Yes; proceed with the discussion of what happened there.

THE COURT:—It might be well to read enough of the resolution to identify it to the jury.

Mr. Richardson:—This is the resolution, I think, that you are testifying about, Doctor:

"WHEREAS, The Medical Society of the District of Columbia has an apparent means of hindering the successful operation of Group Health Association, Inc., if it can prevent patients and physicians in its employ from being received in the local private hospitals;

"WHEREAS, The Medical Society of the District of Columbia has no direct control over the policies of such hospitals as are determined by their lay boards of directors, except through control of its own members serving on their medical staffs; and

"WHEREAS, Conflicts between the Medical Society of the District of Columbia and any local hospital arising from an attempt to enforce the provisions of Chapter 9, Article 4, Section 5 of the constitution should be assiduously avoided if possible because of the unfavorable publicity which would accrue to its own members. "Therefore be it

Resolved, That the Hospital Committee be, and is hereby, directed to give careful study and consideration to all phases of this subject and report back to the Society at the earliest practicable date its recommendations as to the best way of bringing this question to the attention of the medical boards of directors of the various local hospitals in such manner as to obtain the maximum amount of practical accomplishment with the minimum amount of friction and conflict."

By Mr. Laskey:

Q.—What was your purpose in introducing that resolution, Dr. Willson? *A.*—The one purpose, solely, was to prevent, if possible, the sending of Dr. Sprigg's letter to the boards of directors of the hospitals.

Q.—Was there discussion of that resolution? *A.*—Oh, yes; there was considerable discussion of the resolution. The wording of the resolution was deliberately chosen—I mean to say, deliberately for anything that was done so spontaneously on the spur of the moment as this resolution was drawn—because there was a wide divergence of view within the Society as to this whole situation with respect to the G. H. A. My own personal feeling was—I may have been right or I may have been wrong—that this method of approach to the hospitals in connection with G. H. A. was inexpedient and calculated to engender friction rather than any real assistance in the problem; and the wording of the resolution was deliberately employed, as far as its "whereases" were concerned, for the sole purpose of getting enough votes to send it through the Society. The necessity for some such parliamentary tactics in the meeting is shown by the fact that the vote was quite close, 68 to 53.

Q.—Was that vote in favor of the resolution or against it? *A.*—In favor of the adoption of the resolution,—

Q.—All right, go ahead. *A.*—And the sole provision of the resolution which I wished to get over was merely to get the thing into a committee; that I felt, not being in any way connected with the policy forming duties of the Society at that time, that to my mind was the way possibly to choke the thing off, and prevent it from being sent to the hospitals.

Q.—Did it have that effect? *A.*—Yes, it had that effect to this extent: that the Hospital Committee took the resolution under advisement in conformity with the action of the Society, and at a meeting—what was the date, November 11, was it?

Q.—November 11, right. *A.*—November 11, the committee reported to the Society; there was considerable discussion and it was re-referred to the committee with instructions to consider it further; and at the next, I think, the next business meeting of the Society in December the committee finally reported. I don't even recall whether I was present at that meeting. I may have been. The action proposed finally—

Q.—Are you referring to the meeting of December 1, the first meeting of the Society in December? *A.*—Yes, as I said the committee reported the evening of November 11, and it was re-referred to the committee, and then on December 1 the committee made the report which was to the effect that the attention of the Boards of the hospitals, as I recall, the medical boards of the hospitals should call the attention of the Boards of Directors to what has been called, as I learned subsequently, the Mundt Resolution.

Now, may I trace my connection with that situation from that point on?

Q.—Yes. That resolution which came up on December 1, that was adopted? *A.*—It was adopted. As I said, I may have been there; I have no recollection of that meeting. I have a distinct recollection of the meeting of November 11.

Mr. Laskey:—Gentlemen, there is no question that that resolution was adopted on December 1.

Mr. Lewin:—No question.

Mr. Richardson:—May we read that?

THE COURT:—Yes.

Mr. Richardson:

"That as a matter of educational policy the Medical Society of the District of Columbia strongly recommends that all hospitals engaged in the teaching and training of residents, interns, and nurses, where possible, follow the recommendation of the American Medical Association regarding the constitution of their entire medical staffs, namely, that each appointee be a member of the Medical Society of the District of Columbia or a local Medical Society in this immediate neighborhood and a member of the American Medical Association."

Q.—Was there any further action with respect to your resolution which you recall? *A.*—None whatsoever. The only further action with which I had any connection personally was in connection with the action on this proposal which was just read, which was the final action of the Hospital Committee; that is so far as it concerned my connection with Columbia Hospital.

Q.—Doctor, do you recall a local physician by the name of Scandiffio? *A.*—I do.

Q.—Do you recall that his name came up before the committee with respect to charges that had been made? *A.*—Oh, yes, I remember all that. I had nothing to do with it. I wasn't on the Executive Committee. As I say, I had resigned from everything in connection with the Society, from all the committees, just retained my membership, but I knew that he was charged by the Society and tried by the Executive Committee, and the recommendation of the Executive Committee was that he be expelled, and that came up at the Society meeting.

Q.—Were you at that meeting? *A.*—At which the matter I have just referred to came up?

Q.—Yes. *A.*—I was.

Q.—What was the recommendation? *A.*—The recommendation of the Executive Committee was that he was guilty of the charges and the recommendation was that he be expelled from the Society.

Q.—Do you recall with what he was charged? *A.*—He was charged with having violated Chapter IX, Article IV, Section 5, and also two or three other charges of violations of certain provisions of the Constitution.

Q.—Do you recall whether they were sections 1 and 2 of Article III of that Chapter IX? *A.*—I couldn't recall at all from my own recollection what the numbers were.

Q.—Well, do you recall what in substance those charges against Dr. Scandiffio were? *A.*—My recollection is that one of them involved a violation of the code of ethics of the American Medical Association, in that he had contracted to give his services under circumstances under which he could not render good service. I believe that was one.

Q.—Do you recall anything about the requirements that a physician file his contract with the Society? *A.*—Yes, that was the other one: that he had failed to file his contract with the Society, the C. C. & I. N. Committee, as required by the Constitution. Yes, I remember that now.

Q.—Did you know Dr. Scandiffio prior to that? *A.*—I imagine that some years ago I met Dr. Scandiffio, but even at that time I had no recollection of him individually, and I doubt if he came in this courtroom now I would recognize him.

Q.—How did you vote on that matter? *A.*—I voted reluctantly for his expulsion.

Q.—You say "reluctantly"; why do you say that? *A.*—Because I felt it was incumbent on the Society to protect itself, and to set an example. It had adopted a constitution. Its members had applied for membership voluntarily in the Society and had voluntarily obligated themselves to obey the provisions of the constitution; and while I didn't like the provisions of Chapter IX, Article IV, Section 5, he had violated that and violated other provisions of the constitution, as far as I could determine from the report of the Executive Committee and, as I say, with reluctance, I voted for his expulsion.

Q.—As a result of that action of the committee what, if any, effect has that had upon your permitting Dr. Scandiffio to attend children, babies, whom you delivered in Columbia Hospital, whose mothers were his patients? *A.*—Dr. Scandiffio is a pediatrician and he was associated personally with a very intimate friend of mine, who was one of the leading pediatricians here in Washington for a good many years; and while I didn't know Dr. Scandiffio very well, he had been a pupil of mine at Georgetown and had been, as far as my knowledge went, well trained and, as I say, he had been associated with this very distinguished pediatrician for some years, and at the time this whole business was boiling in the Medical Society I had from the very beginning many patients in my private practice who were members of G. H. A.—and that was from the very beginning of G. H. A. down to the present time—and on several occasions during that period patients of mine in the hospital would say they would like to have Dr. Scandiffio see their babies and I invariably told them that so far as I was concerned he was a competent and able pediatrician and I had no objection to him seeing them, their babies, if he wished, and he did, as a matter of fact, see babies of several patients of mine on several occasions.

Q.—When you say he did "see" them, what do you mean? Do you mean he just viewed them or treated them professionally? *A.*—I am using that in a medical sense; technical sense. When a physician sees a patient, as was the case with Dr. Scandiffio, he does so for the purpose of taking charge of the patient. The sooner I get rid of them, the babies after they are born, the better I am pleased.

Q.—Was that the close of your contact with the Scandiffio incident? *A.*—Yes.

Q.—What was your connection with Columbia Hospital in the years 1937 and 1938, that is the Columbia Hospital for Women? *A.*—My official title was Attending Surgeon. There are eight attending surgeons, four of whom have a surgical service on women, and four of whom are attending obstetricians, and I was one of the latter, and, as such, a member of the Medical Board of the hospital.

Q.—What classifications of surgical medical services did they have there at Columbia at that time? *A.*—You mean with respect to the qualifications on the courtesy staff?

Q.—Yes. *A.*—You see, they had an attending staff which was constituted as I have indicated, plus the fact that they had a pathologist and a senior anesthetist and an attending pediatrician, to take charge of the nursery; and, in addition, they had a courtesy staff, and the courtesy staff was classified in three categories, three groups—one, two and three.

Class 1, individuals who had privileges to practice in the hospital on the courtesy staff who were entitled to do any operative procedure they wished in gynecology. That is any particular surgical treatment of women for diseases peculiar to women.

Q.—Does that classification include the most serious operations? *A.*—It includes everything, everything connected with surgery on the organs peculiar to women.

The second qualification was major obstetrics, which meant that that individual who had such privileges to practice in that class was entitled to do a craniotomy for instance, or destroy the unborn baby, and remove the uterus at the same time. In other words, he could do anything to take care of a woman in labor.

And the third classification; class 3, members of the courtesy staff who enjoyed privileges under class 3, were permitted to come into the hospital to handle women in labor as long as the labor was progressing normally and satisfactorily. However, if the labor were too much prolonged or delayed, or hemorrhage or convulsions, or any complications developed, then that individual was required to have consultation, and it was the duty of the staff of the hospital—I mean the attending obstetricians and their associates—to provide that consultation for them, and free of charge to the patient if the patient was unable to pay for it. Those were the three classifications.

Q.—Do you recall Dr. Selders' application for courtesy staff privileges at Columbia Hospital? *A.*—Oh, yes, I recall the fact that he applied. I would like to say before I start discussing the matter that, of course, that is some years ago, and I have tried to refresh my memory from the minutes of the Medical Board of Columbia Hospital, but I think I will be in agreement with counsel when I say they are in a hopeless mess. There is very little I could get out of them. I welcome the opportunity to discuss Dr. Selders' application from start to

finish, but I doubt if I can pin it down to definite dates. I would be very glad to have counsel point out to me any error I may make in that connection.

Q.—Irrespective of the date, you recall the application having been made to that hospital by Dr. Selders? *A.*—Yes, very well.

Q.—Will you please state what, if anything, you had to do with that application? *A.*—Dr. Selders, if my recollection is correct, and I am sure it is, Dr. Selders applied to Columbia Hospital for the privilege of doing general surgery, major gynecology, major obstetrics and normal obstetrics. In other words he applied for privileges in classes 1, 2 and 3, you see, and, in addition to that, he packed on the application to do general surgery in the hospital, which meant he could take out a brain tumor or do a thyroid, or operate for an empyema in the chest; anything. Now, Columbia Hospital does not have on its staff of the hospital anything corresponding to my position: I mean it has no general surgery, you see. There are general surgeons who can practice there, but they are on our consulting staff. In other words, we have a consulting staff of general surgery and in the event a patient for whom the hospital is responsible, is in the ward, developed, for instance, an empyema from pneumonia, following childbirth, and we haven't our own, then we would call in a consultant because we wouldn't know about it, it not being in our line; so Dr. Selders applied for the whole works: 1, 2, 3—everything—and as far as I know there isn't any such animal existing in the United States; they just don't come; and the action of the Board was, however, to give consideration to the application.

Now, as an obstetrician and gynecologist I wouldn't set myself up as competent to determine the ability of a man to do general surgery; I do not know enough about it to even gage his ability from the credentials he presents and, for instance if he said he was or had been attending such and such a clinic, unless it was say the Mayo, with which I happen to have some knowledge—I probably wouldn't even know enough about the standing of the clinic he referred to, to intelligently pass on it; so the application as regards general surgery, despite the fact that we didn't have any such individual on our staff, was referred to the Washington Academy of Surgery for the guidance of us as to what his qualifications were.

Then, the question of his ability to do major gynecology was something that modestly I think I have some ability to gage. However, that was referred also to the Washington Gynecology Society for an advisory committee in the same way we had referred the surgery application to the Washington Academy of Surgery, because it was our custom to do that even when we felt competent to examine credentials on that point. The net result of it was that the Academy of Surgery advised us adversely as to his qualifications in general surgery. The Washington Gynecology Society advised us adversely as to his qualifications to do major obstetrics and gynecology, which was in accordance with the opinion of the Medical Board, as to those qualifications; and since he had applied for all three groups, the Board, which only acts in an advisory committee—the directors, the board of directors can put anybody on there it pleases—advised the board of directors against granting of the privileges desired. That, I recall, was the action of the board.

Q.—After Judge Bailey's decision in the Group Health case in July 1938 was an application of Dr. Selders for courtesy privileges at Columbia Hospital for Women renewed? *A.*—Well, I couldn't time it exactly as to just when it was renewed. I do happen to know, and furthermore my impression is that the application was received from the Group Health Association rather than Dr. Selders; that is my impression now.

Q.—In respect to your action on the second application, you may proceed. *A.*—As I say, I don't recall just when it was, and my recollection may be wrong, but I think that the renewal application came directly from some authority in G. H. A. I don't think it came from Dr. Selders direct.

Q.—Mr. Kelleher informs me that it was on Sept. 2, 1938 Dr. Selders wrote to Mr. Ashburn, the superintendent. *A.*—Was it Dr. Selders? It seems to me that there was some correspondence directly from some official of G. H. A. regarding the application, but the gist of it was that they then considered that this application should be treated separately for each group; they wanted to consider each class separately; and I saw something in the minutes of the medical board where the matter came up at a meeting in September 1938 and there was a motion made before the medical board that Dr. Selders' application for privileges 1 and 3—that was the motion as it appears in the minutes, be considered; that would be major gynecology and minor obstetrics, that is normal obstetrics, and would leave out major obstetrics; and the motion was made that it be considered; and it was recommended adversely to the Board of Directors. Thereupon, I moved that the Board of Directors be advised that the medical staff didn't think it advisable to act on the application at that time, and by a divided vote that recommendation or motion prevailed. The recommendation was sent to the Board of Directors. The Board of Directors acceded to it, and the net result was that Dr. Selders was permitted privileges pending final disposition of it and, pending that period, he was permitted to handle normal obstetrics in the hospital.

My position with respect to that matter was this. I remember very distinctly when that second application came before the Board, I said to the Medical Board this: I said there isn't any question in my mind but that this man is not competent to do general surgery in this hospital, but that is out; and I equally convinced that he has not shown any evidence that he should be granted the privilege of doing major gynecology, or to handle desperate cases of childbirth, but were he a member of the Medical Society of the District of Columbia you would grant him privileges or at least recommend him for privileges in Class 3—

Q.—Being what? *A.*—Normal obstetrics, and, in my judgment,—I have absolutely this recollection, of taking this position,—in my judgment, this situation should be handled in the same way. These men on G. H. A. should not be admitted to practice in any hospital, including this one, if they cannot show they possess the qualifications which entitle them so to do, the same as other men in or out of the Society; and, incidentally, at the very time Dr. Selders' application was before the hospital board at Columbia we turned down a much more competently trained man who was a member of the District Medical Society, and the Board of Directors sent the application back to us under pressure from members of Congress and various high officials, and the Medical Board stuck to its guns and refused to alter its position; and that man was a member in good standing in the Medical Society of the District of Columbia. But that is a diversion. My opinion was that none of these men should be admitted to staff privileges unless qualified to do the work for which they apply; that the same test should be applied to them as to any other man who makes application, but if they were qualified the fact that they were on the staff of G. H. A. should make no difference; that the board should take a position comparable to the one as related by Dr. Macatee was taken at Garfield. They should either be admitted to practice pending the outcome of the question of legality of G. H. A. or they should be kept out of the hospital altogether; and I think I was right about that.

Q.—Now, in respect to the claim of members of G. H. A. to have their complaints and illnesses treated in the hospital by a G. H. A. physician: how, at all, does that vary from the right of any citizen of the District of Columbia, not a member of G. H. A., to go into a hospital in which he has not courtesy staff privileges and there treat a patient? *A.*—Well, of course, that I think is one of the most outstanding examples of the way this G. H. A. group—I am not referring to their medical staff now; I am referring to the crowd that had the thing in control and who were going to ride roughshod over the situation in Washington in connection with the hospitals; because there isn't a member of this jury who if taken ill tonight could call up a hospital and get in there and be treated by a physician of their choice unless that physician is admitted to courtesy staff privileges in that hospital, but the G. H. A. organization proceeded to take the position that because an individual was a member of G. H. A. they were different and they were entitled to have a privilege denied to every other citizen in the District of Columbia; it boils right down to that.

Q.—What privilege is that to which you refer? *A.*—The privilege of calling a hospital and saying "Dr. Blank is my physician, and I want to get in there and he is going to take a tumor out tomorrow," and the hospital would have nothing to say whether the doctor was competent to do it or whether the patient was committing hari-kari.

Q.—What was the final action on Dr. Selders' application, if you recall? *A.*—I recall no action after that action taken in September 1938. I know that Dr. Selders did attend some normal obstetrical cases in the hospital.

Q.—Dr. Willson, did you, at any time, engage in an unlawful combination and conspiracy with any of your co-defendants or with any other person, organization or society, to undertake to restrain trade in the District of Columbia, in violation of the Sherman Anti-trust Act? *A.*—I did not, and I never contacted anybody in the American Medical Association in this matter in the period covered by the indictment, on that subject or any other; and, so far as my co-defendants are concerned,

with two or three of them I discussed the matter casually from time to time, but I never did more. I was out of office, held no office in the Society; out of any responsible committees, and any conversation I had with any of my co-defendants was in the way of disagreement with some of the steps which were being taken.

Q.—Dr. Willson, you know who your co-defendants are, do you not? *A.*—Well, I don't know whether I can name them all, but I recognize them.

Q.—I don't want to repeat the names: you may not be able to repeat the names, but you knew all of the co-defendants, individuals and societies, and associations? *A.*—All of them.

Q.—Now, I want to ask you whether you at any time combined and conspired with your co-defendants, or with any member of the Medical Society of the District of Columbia, not named as defendants, or with any person or persons to the grand jury known or unknown, to restrain trade in the District of Columbia; that is to say, for the purpose of restraining Group Health Association, Inc. in its business of arranging for the provision of medical care and hospitalization to its members and their dependents on a risk-sharing prepayment basis? *A.*—I never did; never took any action concerning G. H. A.

Q.—Or for the purpose of restraining the members of Group Health Association, Inc. in obtaining by cooperative effort adequate medical care for themselves and their dependents from doctors engaged in Group Health medical practice on a risk-sharing prepayment basis? *A.*—Never did.

Q.—Or for the purpose of restraining the doctors serving on the medical staff of said Group Health Association, Inc., in the pursuit of their calling? *A.*—I never did.

Q.—Or for the purpose of restraining doctors not on the medical staff of Group Health Association, Inc., practicing in the District of Columbia, including the doctors so practicing who are made defendants herein in pursuit of their calling? *A.*—I never did.

Q.—Or for the purpose of restraining the Washington hospitals in the business of operating said hospitals? *A.*—I never did.

Q.—Dr. Willson, did the Columbia Hospital have any rule or regulation requiring all members on its staff, either regular or special, to be members of the Medical Society of the District of Columbia? *A.*—Mr. Laskey, as far as my knowledge goes, they never had any such rule until,—the only thing I know in that connection about Columbia Hospital is this: that following the final recommendation of the hospital committee, as a result of my motion of November, the secretary sent a communication to the hospitals calling their attention to what I now know as and recognized as the Mundt Resolution of the House of Delegates of the American Medical Association.

Now, the record of the minutes of the Medical Board of the hospitals shows that that matter came up before a meeting of the Medical Board on March 10. I don't know why it was so long getting there, but the minutes of the Medical Board show that on March 10, Dr. Crowley, who is not a defendant here, and who is a member of our staff, moved that the Medical Board recommend to the Board of Directors that it adopt this policy, which was in the Mundt resolution. The Board of Directors evidently received that recommendation and sent back a request to the Medical Board that it rescind that recommendation, and that, according to my best recollection and as refreshed from the minutes, came up before the Medical Board of Columbia Hospital at its meeting of March 28 or 30, 1938, that would be,—yes, the action was December 1937: yes, that is right, March 28-30, 1938, and the record in the minutes show that Dr. Willson moves that the Medical Board rescind that, and that action was taken.

CROSS EXAMINATION

By Mr. Lewin:

Q.—I am having difficulty getting all these hospital documents in order, so I may have to proceed rather slowly. Dr. Willson, do you know about the efforts of the defendant Dr. Cutter to get your hospital to adopt and observe what you later learned was the Mundt Resolution in November 1937?

Mr. Richardson:—We object to that and we desire to have the language of Dr. Cutter stated. He made no effort to get that or any hospital to adopt and observe the Mundt Resolution.

By Mr. Lewin:

Q.—I am simply asking whether he knows about the correspondence between Colonel Ashburn, your superintendent, and Dr. Cutter, as to what you later learned to be the Mundt Resolution. *A.*—I have no recollection as to that; it is a perfect blank, so far as I am concerned.

Q.—You didn't know at all about this letter of Colonel Ashburn, the superintendent, to the defendant Dr. Cutter, dated November 5 saying:

"As for demand that 'physicians on the staff of hospitals approved for intern training should be limited to members in good standing in their local county medical societies,' it meets with the approval of the Medical Board as regards future appointments."

A.—I have no recollection of it. It may have come before the meeting. There were a great many meetings of that Medical Board I never attended; and it is possible that it may have come before a meeting which I did attend. If so, I have no recollection of it.

Q.—You were, however, a member of the Medical Board? *A.*—Yes.

Q.—And this letter I am referring to you was written two days after that famous resolution of yours?

Mr. Laskey:—I object to the characterization of the resolution as "famous."

Mr. Lewin:—I withdraw it.

THE COURT:—I wish counsel would refrain from characterizations.

The Witness:—From a literary point of view I would say it was infamous.

By Mr. Lewin:

Q.—Well, this doesn't recall anything to your mind at all? *A.*—No.

Q.—But it rather indicates, doesn't it, that from November 5 on— *A.*—(Interposing) I didn't read the letter.

Mr. Laskey:—I submit that the witness has testified that he never saw the letter, to his recollection, and now he is being asked if it doesn't indicate something.

THE COURT:—It is argumentative; asking what the action of the superintendent in writing a letter indicates. He says he knows nothing about it.

By Mr. Lewin:

Q.—Well, you wouldn't deny that about that time the Medical Board did say that this so-called demand met with its approval, so far as future appointments were concerned?

Mr. Laskey:—Objected to: it is argumentative.

THE COURT:—Yes. He has stated what the action of the Board was, and his particular action with respect to that.

Mr. Lewin:—All I wanted to find out is whether his position is that the Board didn't pass that approval, or whether he simply doesn't know about it.

THE COURT:—You may ask him that.

By Mr. Lewin:

Q.—Did you intend to deny that the Medical Board—

Mr. Laskey (interposing):—That is not what your Honor indicated he might ask.

THE COURT:—He may state whether or not this letter changes his recollection as to what the Medical Board did. I think that would be satisfactory.

The Witness:—Mr. Lewin, the only recollection I have—I assume you are referring to the Mundt resolution—the only recollection I have about the matter is what I testified to on direct examination as to the meeting with Dr. Crowley, and that I moved that the action of the Board be rescinded; that is my only recollection about that. I am definite about that, because I recall also I stated to the Medical Board that it took in people who could pay their dues; it would tend to keep them out, and I wasn't for it.

By Mr. Lewin:

Q.—You did see Dr. Selders' application, made in the fall of 1937? *A.*—You say I saw it?

Q.—Yes. *A.*—I couldn't say I saw it. It was probably read. It was undoubtedly read; it must have been read.

Q.—It was referred to the Medical Board, of which you are a member? *A.*—Yes.

Q.—And I suppose you voted with regard to the recommendation on the application? *A.*—Every time I was present I voted; I do not mean to intimate that I was ever present and did not vote.

Q.—So it would be safe to say that you read it and knew its contents? *A.*—Safe to say I knew its contents.

Q.—And isn't it true that the application followed the usual form and gave you information as to his birth, his education and his experience; his teaching experience; his hospital experience, and then his references? *A.*—So far as I know. I have no recollection to the contrary.

Q.—And don't you remember that he gave you the names of certain gentlemen, doctors to whom you might write to get

information with regard to him and his qualifications? *A.*—I have no recollection as to that. I assume he did; I have no recollection of any names of individuals.

Q.—Do you have any recollection now of having received any letters from his references? *A.*—No. Well, now, I have recollection that such letters were received and read to the Board, but other than that—as to who wrote them—I have no recollection.

Q.—And that must have entered into your consideration of his application? *A.*—Well, that question I couldn't answer because I have no recollection of their contents.

Q.—Don't you know, as a matter of fact, that the only two persons listed on the application to which the Columbia Hospital wrote were the Worcester City Hospital and the Harris County Medical Society? *A.*—Well, within the last few weeks, within the last two weeks, my recollection; from my discussion with a fellow member of the Medical Board, my memory has been refreshed on that point, but if it had not been for that, I would have no recollection.

Q.—It would be the usual thing and expected thing for your board to communicate with the references that are given? *A.*—I think so, if there is any question involved in the applicant's fitness that probably would be done.

Q.—And this application leaves a space for the names of references, so it contemplates references should be furnished? *A.*—I have no visual picture of the application blank at the present time; I have no idea what it looks like, what it calls for.

Q.—You would think if you were going to investigate the qualifications of a doctor that would be one of the sources you would turn to? *A.*—Yes.

Q.—But you have refreshed your recollection so that you know that the references were confined to the Worcester Hospital and Harris County Society? *A.*—Are you referring now to his qualifications in surgery?

Q.—I am referring to all his qualifications. *A.*—I want to be perfectly fair. I have no recollection about this thing, that is as to his surgical qualification, except the thing was referred to the Washington Academy and that was their responsibility.

Q.—Now, I am going to show you what purports to be a letter which Colonel Ashburn, the secretary of the medical board, wrote to the Houston Medical Society, that would be the Harris County Medical Society? *A.*—I assume so.

Q.—He says, doesn't he:

"I am directed by the Medical Board of this hospital to seek your aid in determining the qualifications of Dr. Raymond E. Selders, who practiced in Houston from 1928 to 1935, for doing major and gynecological surgery and operative obstetrics.

"Dr. Selders is an employee of a medical cooperative or insurance organization recently formed by employees of the Home Owners Loan Corporation. This movement has received national attention and has excited much opposition in local medical circles. Dr. Selders, while apparently a generally well trained man, has not submitted evidence of the special training and experience usually demanded by this hospital of men seeking the privilege of doing operative work in gynecology and obstetrics.

"Because of the special circumstances of the particular case and the Board's desire to act in a fair and judicial manner, any assistance you can give it will be greatly appreciated and will be held confidential.

"Very truly yours,
"P. M. Ashburn, M.D."

Q.—Now, were you a member of the Medical Board that gave instructions to Colonel Ashburn to write that sort of a letter? *A.*—What is the date?

Q.—Nov. 25, 1937. *A.*—I was a member of the Board but whether I was at that meeting I have no recollection, and I have no recollection of giving any such instructions.

Q.—As a matter of fact, you would say it was true, and known to the Medical Board? *A.*—As you read it, I heard nothing that wouldn't be true, and it is under Colonel Ashburn's signature.

Q.—It calls attention to G. H. A.? *A.*—Yes.

Q.—And that is the "movement" which he says has received national attention and has excited much opposition in local medical circles? *A.*—Yes.

Q.—I wonder whether you are familiar with the letter which the secretary of the Harris County Medical Society wrote back in answer to this letter. It is dated Dec. 2, 1937. Here is a letter from Secretary Coole of the Harris County Medical Society. Did that come to the attention of the Medical Board? *A.*—It may have done so. I think I would have recognized that signature if I saw it before. I have no recollection of it.

Q.—You would say in ordinary course this information would generally be given you. Doesn't he tell you this:

"Dr. Selders is a member of this society in good financial standing. His record here is clear and shows that he is academically and professionally well qualified. I have been given to understand that recently he completed his Master's degree in Surgery at the University of Pennsylvania which should further qualify him."

And then he says:

"The Harris County Medical Society strongly condemns any such practice and if the allegations are found to be true, Dr. Selders will be subject to disciplinary action on the part of the Society."

Q.—Does that refresh your recollection that that information came as a result of that reference? *A.*—None whatsoever. I have no recollection of having seen it before.

Q.—You think perhaps you voted without that information and knowledge before you? *A.*—I am afraid you will be getting me in bad with the Board of Directors but the fact is I didn't attend many meetings, especially at this time.

Q.—Didn't Colonel Ashburn on the same day that he wrote the Harris County Medical Society send a similar letter to the Worcester City Hospital? *A.*—All I can say is I recognize his signature here. I have no recollection of that. Understand, I may have known about it at the time, but the matter wasn't of sufficient importance to me to make any definite impression. It was a few years ago, and I just don't remember.

Q.—I wonder if this information which Dr. McIver forwarded came to your attention? *A.*—Neither could I answer that. I can say that within the last week I learned, or my memory was refreshed to the effect that there had been a communication from the Worcester Hospital, but as of November 1937 I have no recollection of it as of that date.

Q.—Your memory has been refreshed as to those facts then? *A.*—No, my recollection is that I was informed here recently that there was a communication from some individual in Worcester.

Mr. Richardson:—We object to this method of examination. The witness has said over and over again he knows nothing about this, and counsel continues to examine him with reference to it.

THE COURT:—Yes, the witness disclaims any knowledge of the letter; therefore as to him its contents are not a proper basis for question.

Mr. Lewin:—He said he had refreshed his recollection as to the letter fairly recently.

THE COURT:—He says that he has not refreshed his recollection; he says his recollection is that he was informed recently of something of the sort.

The Witness:—I beg your pardon. I didn't say it refreshed my recollection about that particular letter. I said it refreshed my recollection that there had been some letter from Worcester.

Mr. Lewin:—All I want to know is whether he knew about this before voting on Dr. Selders' application.

THE COURT:—Ask him that.

Mr. Richardson:—He has replied three times that it doesn't refresh his recollection.

THE COURT:—Ask the question.

By Mr. Lewin:

Q.—Does this refresh your recollection as to the facts which the Worcester City Hospital supplied the Medical Board and your hospital?

Mr. Richardson:—I suggest the witness be permitted to read the letter and then answer the question.

THE COURT:—Yes, that is the proper method. If it doesn't refresh his recollection there is no basis for examining the witness about it.

The Witness:—Now, what is your question?

By Mr. Lewin:

Q.—I want to know whether the letter refreshes your recollection that these facts were before the Medical Board some time before you voted against Dr. Selders. *A.*—I couldn't say. It doesn't refresh my recollection as to whether this specific letter or these specific facts were before the Board the result of this letter, but I know that such facts were before the Medical Board. Whether they came from this particular source or not, I could not say.

Q.—Were these facts before the Board: that Dr. Selders had served a residency in the Worcester City Hospital in surgery between the dates July 1, 1936 and July 1, 1937, coming to that institution from the Pennsylvania Post-Graduate School, where he had taken a course in surgery the previous year? That as to the number of operations he performed, the only accurate figures would have to be gained from a survey of a large number of records, but scanning the operating schedules for the year he was listed at the Worcester Hospital to operate on 273 cases, of which a hundred and ninety might be classed

as major and 83 as minor. That these figures did not necessarily mean that he had performed these operations himself.

"He may have elected to assist someone else in the operation, or does it mean that this is all the operating that he participated in. He may have assisted or otherwise participated in considerably more than are shown here."

Doesn't it also give you these facts:

"Dr. Selders was a resident on the surgical service here and, therefore, did not figure to any particular extent in obstetrical work. Gynecology is here absorbed in general surgery and one may assume that he had considerable contact therefore with gynecological surgery."

Those facts, you say, were before the Board as to his experience in the Worcester City Hospital at the time they denied his application? *A.*—I assume that similar facts were before the Board, but I have no recollection of these specific facts. I could comment on them if you want me to, but it would not be a question of recollection.

Q.—You are not sure then whether the Board knew of Dr. Selders' experience at the Worcester City Hospital? *A.*—I assume that is absolutely true, but you ask me to recall things from my memory as far back as 1937, which I am frankly unable to do.

Q.—I appreciate that. I am not trying to overtax your memory; I am trying to refresh it. *A.*—It is easy to overtax it.

Q.—I think you did say that you referred this application to the Washington Academy of Surgery, in so far as it was for general surgical privileges? *A.*—Yes.

Q.—And is it not true that the response which the Washington Academy of Surgery gave you was simply this: I am reading now from Government's Exhibit 447-A. It is dated Jan. 31, 1938:

"I have today been informed by the Committee on Hospital Privileges that they recommend the disapproval of the application of Dr. Raymond E. Selders to do general surgery.

"Very truly yours,
"F. C. Fishback."

Q.—You didn't receive from the Washington Academy the grounds on which his application was turned down? *A.*—Evidently not; I certainly have no recollection of the grounds being discussed before the Board.

Q.—I think you testified on direct examination that you referred the application to the Gynecological Society, as regards his application for obstetrics and gynecology. *A.*—I have a recollection that was done; I know it was the usual thing. I am not sure how I learned it was before the Gynecological Society but I know it was. It was the usual routine to do it.

Q.—How long had it been usual routine? *A.*—It wouldn't go back very far because the Gynecological Society had not been in existence only, I should say, a matter of six or seven years.

Q.—Six or seven years? *A.*—Yes.

Q.—As a matter of fact, didn't it go back only to 1937, and just one month—the same month, as this application; that is this custom to send applications to the Gynecological Society? *A.*—I thought your question had reference to how long the Society had been in existence.

Q.—I got the impression from you that Dr. Selders' application was sent to the Gynecological Society pursuant to a course of dealing that had carried on from six to seven years. *A.*—If I made that statement it was an inadvertence. As to our custom, I have no recollection as to when it started.

Q.—As a matter of fact, wasn't that practice started just at that time, the time of the Selders application? Do you think I can refresh your recollection as to that at all? *A.*—I don't know whether you can or not. I begin to have a hazy recollection as to the matter of referring such applications to the Gynecological Society having been discussed with the Board, but my memory couldn't be refreshed as to when it occurred, except to recognize that this signature here on this communication is authentic.

Q.—Let me show you Colonel Ashburn's letter to the Society, referring to Dr. Selders' application.

"I am directed by the Medical Board to request your cooperation and advice as proffered by your letter of Oct. 19, 1937?"

A.—I would say the signature of Colonel Ashburn is absolutely authentic.

Q.—It indicates, does it not, that this was the first time gynecology was resorted to? *A.*—I wouldn't say that, but it indicates it was in November 1937.

Q.—That in 1937 you got an offer from the Gynecological Society that it would consider applications if referred to it for the first time?

Mr. Laskey:—Does it say anything about the first time?

Mr. Lewin:—I can go further into it if you want. I was merely trying to shorten this up.

The Witness:—I wouldn't question this at all. I may have been in error in thinking it was earlier adopted, but I have no recollection of it.

By Mr. Lewin:

Q.—Well, it says here:

"I am directed by the Medical Board to request your cooperation and advice as proffered by your letter of Nov. 19, 1937."

That, of course, would be the Gynecological Society's? And here, "in the matter of obstetrics." *A.*—I would say it was absolutely authentic, but I still say I have no recollection of it whatsoever.

Q.—I see. Again with the Washington Gynecological Society, when it reported it simply recommended against Dr. Selders without giving any ground for the recommendation, did it not? *A.*—I have no recollection of their having stated any ground.

Q.—You do remember that the Medical Board did not consider any grounds as mentioned by the Gynecological Society? *A.*—None.

Q.—Did you interview Dr. Selders yourself? *A.*—No.

Q.—You didn't? *A.*—My experience with Dr. Selders consisted of seeing a strange doctor in the corridor once and asking a nurse who he was and being informed that he was Dr. Selders.

Q.—You didn't observe his operations or his technic? *A.*—He didn't do any operations; he handled a few normal obstetrics.

Q.—Of course, that would be one way to judge his qualifications, to see him in action? *A.*—Very decidedly, if the action was sufficiently broad.

Q.—As a matter of fact before your medical board passed on this application: let me ask you whether or not you had anything more before you than simply the turn down unexplained of the Washington Academy of Surgery, and the turn down unexplained by the Gynecological Society?

THE COURT:—What do you mean by the "turn down"?

Mr. Lewin:—The refusal of the Academy and the Gynecological Society.

THE COURT:—I think it is better for counsel not to characterize these words and these actions.

Mr. Lewin:—It is simply a question of my faulty English; I don't think there is anything else in it.

THE COURT:—Go ahead.

Mr. Lewin:—I will strike the question altogether.

By Mr. Lewin:

Q.—Did you have anything before you when you voted against Dr. Selders' application except this unexplained recommendation of the Washington Gynecological Society, the unexplained recommendation of the Washington Academy of Surgery, and possibly this information with regard to his experience at Worcester, and the information contained on his application? *A.*—Well, as far as my recollection goes that would be a true statement of facts, the proviso, of course, being that you will recall that he applied in the four categories—general surgery, major obstetrics, gynecology and normal obstetrics and, as far as his qualifications in obstetrics and major gynecology were concerned, as I testified on direct examination, I didn't require the reference to the Gynecological Society, because I could gage that myself.

Q.—You could gage it without meeting the man or seeing him operate? *A.*—I could gage it on that letter you just showed me. He doesn't say anything there about obstetrics.

Q.—What about gynecology? *A.*—Shows worse; shows training in a hospital where gynecology was absorbed in general surgery, and if there is any worse training for a gynecologist than that, I can't tell you what it is.

Q.—It does show that his training in gynecology might be considerable though, doesn't it? *A.*—It shows him in general surgical service, and I would say it would certainly not be considerable from the point of view of putting a man in a position of turning him loose in a hospital in gynecology. It wouldn't show he was competent to do that at all.

Q.—You remember it did give this information: this is from the superintendent of the hospital, "One may assume that he had considerable contact, therefore, with gynecological surgery"? *A.*—I testified that wouldn't mean a thing to me, because, as stated in the letter, that was all absorbed in general surgery.

Q.—But you didn't go any further to find out what that considerable contact with gynecological surgery might be? *A.*—I am talking about this letter you let me read; I am not talking about my other conclusions.

Q.—The point is you didn't make any investigation to find out whether he was qualified or not? *A.*—I wouldn't say that; I think we made a very good investigation.

Q.—The one you told me of here in this testimony? *A.*—Entirely sufficient for passing on that candidate, under the circumstances disclosed in his application and in this letter. Remember, this is a special hospital. It is one that has a very wonderful record throughout the country in obstetrics and gynecology, and it is not taking any chances in putting a man of uncertain ability on its staff.

Q.—Did your hospital admit him to the courtesy staff? *A.*—Yes. As I testified, when he separated his requests, when it came up as a separate proposition. The first time, it was coupled with his request for general surgery and major obstetrics and gynecology. When it came up as a separate proposition, I have already testified that motion was made to consider the application and he was turned down, and I moved to advise the board of directors that it was inadvisable to take any action at that time, and the result of that motion was that he did have privileges in the hospital in normal obstetrics during the pendency of his application.

Q.—But he was not admitted to the courtesy staff at any time? *A.*—Only indirectly. As I testified, he did see patients there, Mr. Lewin.

Q.—Was he ever admitted to the courtesy staff of the hospital to do anything? *A.*—No, except that the result of that action was that he did bring patients in. It is hair-splitting, it seems to me. He was not formally placed on the courtesy staff, but he did have the privilege of bringing normal cases in there for a time.

Q.—Did this letter come to your attention, the letter from Dr. Selders to the hospital, dated April 23, 1938, supplying you with more details in regard to his abilities (handing a paper to the witness)? *A.*—I have no recollection of ever having seen that letter in my life.

Q.—Did you know that Colonel Ashburn wrote to Dr. Selders in April 1938 asking for more information? *A.*—I may have known it, but I have no recollection of it.

Q.—Does this letter refresh your recollection as to the facts? *A.*—Not the least bit.

Q.—Before the Medical Board? *A.*—No. It is apparently brand new to me. I have no recollection of it whatsoever; none.

Q.—Did you know that Dr. Selders, some time in the spring of 1938, withdrew his application for operative obstetrics? *A.*—As I testified, I knew that at some time; I could not state when it was. His request was separated into the different categories.

Q.—And he finally asked simply for privileges in normal obstetrics and in major surgery; is that true? *A.*—In gynecology, was it not? Major gynecology and normal obstetrics.

Q.—Did you see this letter of Dr. Selders of Sept. 2, 1938, Government Exhibit 389? Only a portion of it, I believe, is in evidence, however.

Mr. Laskey:—Will you point out to the witness, please, the portion that is in evidence?

Mr. Lewin:—Yes. This is in evidence (indicating). These things with circles around them are not (indicating).

A.—Am I to consider what is not in evidence?

By Mr. Lewin:

Q.—I think you can consider it all and see whether it refreshes your recollection. *A.*—This letter I don't recall ever having seen, but it refreshes my recollection to the extent that I know there was a request made for separation of his application into different classes. I think that there is an inadvertent error here on Dr. Selders' part, where he says here that—

"I wish to renew my request for permission to do major surgery in Columbia Hospital for Women."

I suppose he means there, Class 1 in gynecology. I do not know whether he means general surgery. He says major surgery.

Q.—Does he not follow that by a statement of his training which refers to general surgery? *A.*—Well, as far as the context goes, it looks as though he was referring to general surgery; but the action of the Medical Board in the same month of September 1938 was based on an application in Class 3, which was normal obstetrics, and Class 1, which is major gynecology, and does not refer to major surgery in the sense of general surgery.

Q.—Is it not true that he specifically in another communication withdrew his application for operative obstetrics? *A.*—I have no recollection of it, Mr. Lewin; but I assume it is true, from the fact that he did not come before the Medical Board at that meeting.

Q.—Look at his letter of April 23, 1938 and see if you remember that. Did I show you that before? *A.*—I think you did.

Q.—Let me show you this particular paragraph (indicating). *A.*—Yes.

Q.—Does not that rather indicate that he withdrew his application for operative obstetrics? *A.*—It definitely indicates that. He says he withdraws his request.

Q.—So that his broad request had been narrowed considerably, had it not? *A.*—By that letter, yes. I testified that I knew it had been narrowed, but I didn't know when it occurred. That refreshes my memory.

Q.—But the fact that it was narrowed still did not give him his admission? *A.*—It finally gave him the privilege of attending cases in Class 3.

Q.—Tell us something about the Washington Gynecological Society. Is not that a society whose membership is composed exclusively of members of the District of Columbia Medical Society? *A.*—My recollection of its constitution is that it is a requirement for membership that a member of the Gynecological Society should be a member of the District of Columbia Medical Society.

Q.—So that when the hospital referred Dr. Selders' application to it, it was simply referring it over to a group of the District of Columbia Medical Society?

Mr. Laskey:—Is it not better to suggest that it was referring it over to a group, each member of the group being a member of the Medical Society?

Mr. Lewin:—I will adopt that suggestion.

A.—Yes. That leaves out the word "simply," and that is all right. That is proper.

By Mr. Lewin:

Q.—Who were the active men in the Washington Gynecological Society in the fall of 1937 when Dr. Selders' application came before it? *A.*—I can say in a general way that it would be the leading specialists in that line in Washington, but as to what particular group of them were active at that time I have no recollection. I am afraid that my attendance at meetings of that organization was very poor.

Q.—Let me see if I can refresh your recollection a little bit from my notes of the minutes of the Council of the Washington Gynecological Society, Nov. 18, 1937. *A.*—Where was that held, Mr. Lewin?

Q.—I do not know that.

Mr. Lewin:

Q.—Was Dr. Crowley your chief of staff at Columbia? *A.*—We do not have a chief of staff. We have a president of the Medical Board.

Q.—Was he the president of the Medical Board? *A.*—At that time?

Q.—Yes; in the fall of 1937 and the spring of 1938. *A.*—He very well may have been, only because I know that he brought back from the board of directors the Mundt Resolution request that we rescind our action, and the minutes said Dr. Crowley brought that back. Therefore if he attended a meeting of the board of directors he would have been the president of the Medical Board at that time.

Q.—Let me see if I understand that. When the resolution of December 1 of the Medical Society which recommended that your staff be limited to members of the A. M. A.— *A.*—That was the recommendation of the Hospital Committee.

Q.—Dr. Crowley was a member of the Hospital Committee, was he not? *A.*—That I could not say.

Q.—I think it appears in evidence that he was. *A.*—He may have been.

Q.—At any rate, when it came to your hospital he was a director of your hospital at that time? *A.*—That I have no recollection of. I testified that I could not understand that that action was taken the first of December 1937—wasn't it?

Q.—Dec. 1, 1937. *A.*—But my recollection of the resolution which was adopted by the society on the advice of the Hospital Committee, its ever being before the Medical Board, was refreshed by looking at the minutes of March 10, and I am at a complete loss to understand what happened to it in the meantime. I have no recollection, you see.

Q.—Apparently, though, your Medical Board, in the spring of 1938, recommended its adoption to the directors. *A.*—It did at the meeting of March 10 on the motion, as I recall it, of Dr. Crowley.

Q.—And on your Medical Board, in addition to yourself, was Dr. Sprigg, one of the defendants in this case? *A.*—He was a member of the board at that time. Whether he was present at the meeting or not I don't know. There is no evidence that I was present at the meeting, and I have no recollection of it.

Q.—And then the directors suggested that the request from the Medical Board be withdrawn and you moved to withdraw it, and it was withdrawn; is not that correct? *A.*—That is correct. That was at a subsequent meeting, in October.

Mr. Richardson:—Mr. Lewin, I think you are slightly in error. His motion was not that it be withdrawn. His motion, after it was withdrawn, was that their previous action be rescinded.

The Witness:—That is correct. The request came from the board of directors to the Medical Board that it rescind its action in recommending the adoption of that policy, and I moved that that action be taken. That is correct.

By Mr. Lewin:

Q.—That policy would be identical with the Mundt Resolution, and you so understood it? *A.*—The policy that we were asked to rescind?

Q.—Yes. *A.*—I would think so, absolutely. But, as I say, I never heard of the Mundt Resolution until I was in this court room.

Q.—Did you know that Dr. Hulburt, a Group Health Association doctor, applied for obstetrical privileges at your hospital? *A.*—I have a hazy recollection of it. I wouldn't recognize the name. I do know that there was some younger man, late in 1938, that applied; but that is as far as my recollection goes.

Q.—I wonder if I could refresh your recollection by showing you my notes of the minutes of the Executive Committee of April 18, 1938 (handing papers to the witness). *A.*—What is this—the meeting of the Executive Committee of the Medical Board?

Q.—Let me show you the minutes of the board on April 14, 1938. *A.*—Have you anything that shows the officers of the board at that time, when Crowley was president?

Q.—I understand Crowley was president.

Q.—Dr. Sprigg was there. He was a member of the board of directors, was he not? Or did he have privileges of the meeting? *A.*—Then there must have been two of them privileged to attend, Dr. Crowley and Dr. Sprigg. My recollection is that at one time one member only of the Medical Board served on the board of directors, and then later on it was changed to two. I don't remember when that occurred.

Q.—Let me go back to the minutes of the Medical Board of April 14, 1938. Does not that refresh your recollection that the application of Dr. A. S. Hulburt for privileges in Class 3 was tabled? *A.*—No; I have no recollection of it at all. The minutes may show whether I was present at that meeting. There were a whole lot of meetings that year particularly that I never attended, and I may not have been there; so I have no recollection of it at all.

Q.—Did you know that he resigned from Group Health Association on April 25? *A.*—I may have known it at the time, but I have no recollection of it.

Q.—Did you know that he was given Class 3 privileges at your institution in early June 1938? *A.*—I have no recollection of that, Mr. Lewin. You see, this whole thing was minor, as far as I am concerned.

Q.—Perhaps it was, but I am trying to get the facts. *A.*—That is all right. I am merely trying to excuse myself for not remembering well.

Q.—Will you look at my notes on the minutes of the meeting of the Medical Board on June 9, 1938? Dr. A. S. Hulburt's application was approved for Class 3 on that date, was it not? *A.*—What are you asking me?

Q.—Whether that refreshes your recollection that after April 25, to wit, in June of 1938, he was approved for Class 3 in your institution. *A.*—I am terribly sorry. All it does is to bring back a hazy recollection to me of having heard that name before the Medical Board.

Q.—Is not your hazy recollection this, that Dr. Hulburt applied when he was a member of Group Health Association and was not given privileges, and his application was tabled until after he resigned from Group Health Association, and then a little over a month afterwards he was given privileges there? Is not that your recollection? *A.*—It is awfully hard for me to separate in my mind what I remember and what I know now; but it begins to clear up in my mind a little; yes.

Q.—Would you say that my question is correct? *A.*—I have no doubt it is correct. In fact, if you ask me if it is so, I would say yes, undoubtedly, because the record seems to show it.

Q.—Would you testify that his connection with Group Health Association had something to do with postponing it until after he had resigned? *A.*—I have no recollection of that.

Q.—Dr. Halstead, another Group Health Association doctor, testified that he applied at your hospital. Do you recall that? *A.*—I do not even have any recollection of there ever having been a Dr. Halstead connected with the G. H. A. or having applied.

Q.—Were you not present at the meeting of the Medical Board on Dec. 9, 1938? My notes show that you were. *A.*—Maybe I was, but I have no recollection of it.

Q.—Dec. 9, 1938. Do not these notes refresh your recollection to this extent, that on that day the application of Dr. Clark D. Halstead for Class 3 privileges was postponed pending further information? *A.*—I have no recollection whatsoever.

Q.—Would you say that you attended that meeting? *A.*—If the minutes say so. I have no recollection of it at all. I do not know any more about where I was on December 9 than you do, I guess.

Q.—I suppose you would not question that that was the treatment that was given his application? *A.*—No.

Q.—Would you say that his connection with Group Health Association had something to do with deferring action from August, when he applied, to December 1938, and then deferring it further at that meeting? *A.*—What was he applying for?

Q.—Class 3 privileges, normal obstetrics—isn't it? *A.*—That is normal obstetrics. And you are asking me what?

Q.—Whether, in your opinion, his connection with Group Health Association accounted for the fact that although he applied in August his application was deferred until Dec. 9, 1938? *A.*—I cannot answer that positively. There were other factors coming in at that time. Everybody who was applying there at the same time was postponed because the hospital staff was so full that we could not take care of patients. Whether that action was in connection with this or not I don't know. I have no recollection of any discussion about the G. H. A. in connection with Dr. Halstead, or anything about it. I don't even recollect that there was such a man.

Q.—Coming back to the Washington Gynecological Society and the people active there, would you say that Dr. Jacob Kotz was active in the Washington Gynecological Society? *A.*—I know he is a member of it, but I have no—what do you mean by active, Mr. Lewin?

Q.—I was going to call your attention to the people present at the Nov. 18, 1937 meeting which seems to have preceded this offer of the Gynecological Society. You have already stated that Dr. Crowley was there. What about Dr. Sylvester? *A.*—What about him?

Q.—Was he on the staff of Columbia? *A.*—Yes.

Q.—A member of the Medical Society of the District of Columbia, of course? *A.*—Right.

Q.—Dr. Pagan? *A.*—He is not a member of our staff at Columbia, but I assume he is a member of the Medical Society—yes; I know he is a member of the Medical Society.

Q.—Dr. Jacob Kotz? *A.*—He is not a member of our staff at Columbia. He may have been at that time—not of our senior staff. He may have been an associate or something.

Q.—Was he not vice-president of the District of Columbia Medical Society at that time? *A.*—He may have been; I don't know.

Q.—Dr. Stanton—was he a member of your staff at Columbia? *A.*—No. I am sure he has courtesy privileges there, but he is not a member of the staff. You get mixed up between what you mean when you say "staff"—between the courtesy and the attending staff. He undoubtedly has courtesy privileges.

Q.—How about Dr. McNitt? *A.*—He was a member of our attending staff.

Q.—He was the man to whom Colonel Ashburn wrote with reference to Dr. Selders' application to the Washington Gynecological Society, and he is the man— *A.*—I suppose he was the secretary of the Gynecological Society.

Q.—Is not this his letter (indicating), saying that the Washington Gynecological Society does not consider these doctors qualified for operative obstetrics? *A.*—Yes. He was a member of the staff.

Mr. Laskey:—What doctors?

Mr. Lewin:—Dr. Oliver Cox, Dr. Richard Castell and Dr. Raymond E. Selders.

Q.—I am not sure how you testified on your direct examination with regard to the action which was taken Sept. 19, 1938, by your Medical Board. See if I can refresh your recollection about it. Is it not true that at that meeting there were present Dr. Crowley, Dr. Sylvester, Dr. McNitt, Dr. Willson, Dr. Sprigg, Dr. Mondell, Dr. Cajigas, Dr. Copeland and Colonel Ashburn? *A.*—That is the way the minutes read.

Q.—These are my notes. *A.*—I have no recollection of it. For instance, Mr. Lewin, I have no recollection of this meeting at all, except that it is in the minutes, and I might refresh my recollection from it. I certainly could not say who was there. There is the list (indicating), and I have no doubt they were all there.

Q.—Refreshing your recollection further, is it not true that Dr. Sprigg moved to reconsider Dr. Selders' application for Classes 1 and 3 and that he be not endorsed? *A.*—That is undoubtedly so.

Q.—And is it not true that it was discussed by various members present, including yourself? *A.*—I assume so, from the minutes.

Q.—Did you not move a substitute resolution that the board consider it inadvisable to act at this time on the application? *A.*—That is right.

Q.—And that resolution was carried, was it not? *A.*—It was carried before the Medical Board and received the approval of the board of directors. The net result was that Dr. Selders, instead of being denied privileges in Class 3, practically got privileges in Class 3 during the pendency of his application, as I understand it.

Q.—As a matter of fact, you remember that when that resolution that you sponsored came before the directors the superintendent reported that Group Health Association had again asked for the granting of privileges to these doctors? Were you there? *A.*—I don't suppose I was. No; I would not be present at that meeting.

Q.—I understood you to say on your direct examination that when you first learned of Group Health Association on May 16, 1938 it was at Dr. Morgan's office; and with reference to Section 5—and I am going to call it Section 5 for brevity, and not go through the rest of it. That is the only Section 5 involved, is it not? *A.*—Yes. Thank you very much.

Q.—Section 5 of the constitution had been in force for 14 months? *A.*—It had been in force a year before the preceding January. That was in 1937, was it not?

Q.—Did you not mean by that testimony that it had been in force as Section 5, but in a radically different form and substance? *A.*—No; I did not. I testified that it had been modified.

Q.—You testified it had been modified only in some minor particulars. *A.*—It seemed to me to be minor.

Q.—Is not this the way it read when it was adopted Jan. 8, 1936:

"No member of the Society shall engage in any professional capacity whatsoever with any organization, group, or individual engaged in the practice of medicine unless the Society has received proof that the profits from such practice inure to the benefit of the medical profession only."

A.—I assume it was. I know it was a different form.

Q.—Did it not remain in exactly that form until March 3, 1937 for a period of fourteen months? *A.*—That is my recollection, precisely.

Q.—Is it not true that so worded it would not be a justification for withholding contact with Group Health Association?

Mr. Laskey:—I object to that as argumentative, your Honor.

THE COURT:—Objection sustained.

By Mr. Lewin:

Q.—Were you not aware, when you heard about Group Health Association and as you discussed it later, that it was a nonprofit organization and that there were no profits to accrue to anybody? *A.*—I probably did.

Mr. Laskey:—If he proposes to connect that with this action, your Honor, the witness has testified that he first heard of Group Health in May, six months after this action.

Mr. Lewin:—My offer is to show that this section of the constitution, which was in force all through 1936 and the early part of 1937, could not have any relation whatever to Group Health Association, but I want to follow that up by showing that the change could bring Group Health Association directly under it.

THE COURT:—That may be, but his testimony is to the effect that he knew nothing of Group Health until after March 1937.

Mr. Lewin:—Yes; that is correct.

THE COURT:—Then, how could that connect his knowledge with Group Health?

Mr. Lewin:—All I want to show now is the simple fact that when he did learn about Group Health Association he found it was a nonprofit organization.

Mr. Laskey.—Ask him what he did find about it.

Mr. Lewin:—I have him on cross examination and I am permitted to lead him.

Mr. Laskey:—I do not object to your leading him.

Mr. Richardson:—Let me make my position clear, if your Honor please. My objection is that the legal proof here is to the contrary as to Group Health Association being a nonprofit organization.

Mr. Lewin:—Will you state to the court what that proof is?

Mr. Richardson:—I have in mind the brief which you filed in the Court of Appeals in which you urged that it was a profit corporation.

Mr. Lewin:—Certainly my brief is not proof in this case, your Honor. I have not referred to the brief for some time, but I seriously question any such representation in it.

THE COURT:—Let us not go back to that. Put your question.

By Mr. Lewin:

Q.—When you learned about Group Health and when you discussed it, did you not understand it to be a nonprofit organization? *A.*—I think so; definitely; yes.

Q.—So that if Section 5 had remained unamended it could not apply to Group Health Association. Is not that clear?

Mr. Laskey:—I object as argumentative.

THE COURT:—Objection sustained. It is purely argumentative.

Q.—On March 3, 1937 it was amended to read as follows, was it not:

"No member of the Society shall engage in any professional capacity whatsoever with any organization, group, or individual by whatever name called or however organized, engaged in the practice of medicine within the District of Columbia or within ten miles thereof, which has not been approved by the Society."

I will not read the rest, because that is with reference to the machinery. But is not that the way it read when you amended it? *A.*—I assume it did. I never carried it in my mind.

MARCH 26—AFTER RECESS

TESTIMONY OF DR. PRENTISS WILLSON

CROSS EXAMINATION (RESUMED)

By Mr. Lewin:

Q.—Dr. Willson, I was questioning you when we adjourned with regard to the amended Section 5. Now, isn't it true that on March 3, 1937, that section became substantially changed from what it had been before? *A.*—Well, Mr. Lewin, that was never my understanding of the matter. The section was introduced originally, and was so understood in the Medical Society always, as a method for controlling the practice of members and the relations of the Society to members who were engaged in contract practice under the Workmen's Compensation Law.

Q.—But by its terms it was not limited to Workmen's Compensation clinics, was it? *A.*—Oh, no, but I mean that was what lay back of its ever having been introduced.

Now, to continue to answer your question, I personally never had the feeling—I don't recall the wording of the thing in either form in my mind—but I never had the feeling that it was substantially changed.

Q.—Before March 3, 1937, it applied only to organizations where profit accrued to laymen, whereas after that date it applied to all persons practicing medicine and to all organizations practicing medicine whom the Society did not approve of for any reason it chose; is that right? *A.*—May I compare them? Will you show me where the two are?

Q.—So that we will be clear about it, isn't this true: that before the change it simply limited your members from having participation in clinics where profit from those clinics went to laymen, whereas after the change it forbade members from having any participation whatsoever with any persons practicing medicine if those persons were not approved by the Society for any reason?

Mr. Richardson:—We object to the question on the ground that it calls for a conclusion of the witness and is purely argumentative; further, the documents speak for themselves.

Mr. Lewin:—I am simply asking for the understanding of the witness.

THE COURT:—I think that is strictly true, Mr. Richardson; however, the doctor has stated his understanding to be that there was no substantial change, and it may be that this cross-examination is reasonable.

By Mr. Lewin:

Q.—Isn't it true that before the change it forbade your members from having anything to do merely with clinics that had a profit, where some of that profit went to laymen, whereas after the change it forbade your members from having anything to do with any persons practicing medicine unless they were approved by the Medical Society, for any reasons the Medical Society saw fit? *A.*—Well, I testified, and I think as I read this now, that this latter provision seems to me to be more inclusive, from the piont of view of its wording; but from the point of view of my understanding of the practical application of the thing, I never had any opinion that there was any difference.

Q.—But I want to be clear about this, and I should like to have a direct answer, if you can make it, to my question. *A.*—I think I stated that: that I thought that more inclusive. The language here was more inclusive.

Q.—But isn't it so inclusive as to bring about the result which I have indicated in my question?

Mr. Richardson:—I object to that as leading and calling for a conclusion of the witness.

THE COURT:—Yes, I think that is true. I think the doctor has explained his previous answer, and it now reduces itself to a mere comparison of the words or the language.

Mr. Lewin:—It seems to me that it leaves it in some confusion, with the testimony simply being that it was more comprehensive later. I should now like to have a definite expression.

THE COURT:—You have the answer. You, of course, could pick out anybody in the courtroom and ask him to give you his understanding of the language of those two sections, and the result would be the same. It is purely an opinion of language.

Mr. Lewin:—Well, I wanted to get the practice under it.

THE COURT:—I think it has gone far enough. He has told you the practice. He has told you he understood that its application was intended for the same purposes.

By Mr. Lewin:

Q.—Didn't you understand that its application would apply to the Group Health Association? *A.*—No, never in the world, because I had had no knowledge of Group Health Association for two months later or more.

Q.—But when you did get knowledge of Group Health Association, didn't it occur to you that this language would apply to Group Health Association?

Mr. Laskey:—I object to that.

THE COURT:—Objection is sustained.

By Mr. Lewin:

Q.—As a matter of fact, didn't you invoke this other section with regard to Group Health Association? *A.*—I never did.

Q.—Didn't you? Well, let's see. You testified that you presented this resolution, did you not? *A.*—Yes.

Q.—At the November 3 meeting of the Society? *A.*—That is right.

Q.—That was directed to Group Health Association, wasn't it? *A.*—No, sir.

Q.—What? *A.*—No, sir.

Q.—Is was not? *A.*—No, sir.

Q.—Was it directed to Group Health Association doctors? *A.*—No, sir.

Q.—What did you mean by this language:

"WHEREAS, The Medical Society of the District of Columbia has an apparent means of hindering the successful operation of Group Health Association, Inc., if it can prevent patients of physicians in its employ being received in the local private hospitals"?

A.—I meant just what it says: that it has an apparent means.

Q.—Wasn't your resolution addressed to the Group Health situation? *A.*—Except indirectly, it had no connection with the Group Health Association situation whatsoever.

Q.—What was the purpose of reciting at the very start that you had "an apparent means of hindering" its operation? *A.*—As I explained in my direct testimony, the reason for bringing in that resolution, except the "Resolved" down here (indicating), was that the thing be referred to a committee, which would present a resolution at the Medical Society, which would prevent the sending of that letter to the boards of directors of the hospitals, and to obtain enough votes, as an old medical organization man, familiar with what had to be done to get things in the Society—to get enough votes to get it passed and get that letter—proposed letter—stopped. There was the whole thing with reference to that resolution, and nothing else but that.

Q.—All right. Now, do I understand that you knew you could not get enough votes for your resolution unless you made it appear that it was directed against Group Health Association? *A.*—I didn't know anything of the sort. How could I know how many votes I would get? All I knew was that there was a great deal of difference of opinion and a great deal of turmoil in the Society, and any number of different views on the subject. What I wanted to do was to present a resolution which would attract enough votes to stop the sending of that letter and bury the whole thing in the committee.

Q.—Wasn't this turmoil in the Society, turmoil with regard to the Society's attitude toward Group Health? *A.*—It was the clashing views of many different individuals and convictions as to the threat involved in G. H. A. Some thought it was no threat at all; some thought it was a great threat. Some wanted to attack the problem one way, and some another. I felt it was making a mistake, as far as the Society was concerned, and my resolution was certainly not to protect G. H. A., neither was it to attack it. It was to protect the Society against a course of action which, in my judgment, could not be sustained and would only, if it were put through, make the Society ridiculous.

Q.—You mean a course of action with regard to Group Health Association? *A.*—I mean a course of action with regard to calling the attention of the lay boards of hospitals to the provision of the constitution, which, as I have testified, I was always opposed to. I was opposed to this thing ever getting into the constitution. I tried to get it out, and for months and months after any of the G. H. A. situation developed, I was persistently and consistently opposed to the application of that provision of the constitution to the G. H. A.

Q.—You knew that the Sprigg letter, which you opposed, was directed to Group Health Association, did you not? *A.*—It was directed to the lay boards of the hospitals, but I know what you mean: it was motivated by the G. H. A. situation.

Q.—Yes, the purpose was to take care of the G. H A. situation? *A.*—I don't know what the purpose was in the mind of the proponents, but it was certainly, in my judgment, connected with the G. H. A. situation; it couldn't be anything else.

Q.—It couldn't be anything else? *A.*—I don't think so.

Q.—You could not think of any other purpose for it?

Mr. Laskey:—For what?

By Mr. Lewin:

Q.—For the Sprigg letter? *A.*—At that particular time—Of course, it could have been applied to many other situations with respect to the hospitals, but at that particular time the natural assumption was that it applied to the G. H. A.

Q.—As a matter of fact, you don't know of any other situation to which it was applied? *A.*—Not at that particular time, no.

Q.—You were offering this resolution as a substitute for the Sprigg letter, weren't you? *A.*—That is right.

Q.—So, your resolution, too, then, was directed to taking care of the Group Health Association? *A.*—I have testified, Mr. Lewin, and you can't make me say that, because it isn't true. I testified that my sole purpose in this resolution was to stop the sending of that letter. The fact it was concerned with the G. H. A. situation was purely coincidental.

Q.—You believed what you stated here, didn't you, in recital No. 1? *A.*—Yes, I did—that it had the apparent means. Just underscore that word "apparent."

Q.—You believed that on Nov. 3, 1936, didn't you? *A.*—That they had the apparent means? Yes.

Q.—On November 3, when you had that belief, it preceded by five days or eight days Dr. Selders' application to your hospital; isn't that so? *A.*—I have no more idea of that relationship in time I have no recollection of any such relationship.

Q.—When you got Dr. Selders' application, you still thought, didn't you, that your Society had the apparent means of hindering Group Health Association, if you could prevent Dr. Selders from being in the hospitals? *A.*—Oh, I don't know, because this language you refer to in this first paragraph occurred to me about 20 minutes past 5, for the first time, on the afternoon I introduced it.

Q.—But after you put it into the resolution, you still had that possibility in mind, didn't you, when you considered Dr. Selders' application, which I believe was sent to your hospital on November 11, you had in mind this belief, didn't you, that the Medical Society had an apparent means of hindering Group Health Association if it could prevent any of the Group Health doctors from being received into the local hospitals? *A.*—I certainly did not, because I had advocated an entirely different—As far as my opinion was concerned, the matter of G. H. A. physicians in hospitals should have been handled in an entirely different manner. I can tell you what I thought about it, if you want me to.

Q.—I think you have told us a lot about it. Didn't you also say that the Medical Society has some control over the policies of the hospitals? Didn't you say in substance that it had some control over the policies of hospitals by its control over the members serving on the staffs? *A.*—I said it has no direct control over the policies of hospitals as determined by their boards of directors except through its control of its own members serving on the medical staffs.

Q.—So, you did believe it had that much control? *A.*—That is exactly what I did not believe, and that is the reason the resolution was introduced, to keep the Society from getting into a ridiculous position with the hospitals. What would have been the result of sending this letter? Suppose the boards of directors said to the Medical Society, "You go and attend to your own business; we will attend to ours." The situation had come up—exactly the same situation—before, when I was on the executive committee, and the Medical Society, as my recollection goes now, on the advice of the

American Medical Association and the American College of Surgeons, had to back down.

Q.—What do you mean by this: "except through its control of its own members serving on their medical staffs"? *A.*—Mr. Lewin, I meant what it says. The only method of control—direct control—over the policies of hospitals which the Medical Society could possibly exert would be through the control of its members serving on those staffs.

Q.—But you meant it did have that much control? *A.*—I just testified I didn't feel it had that much control, because I had seen the thing come up before, and the Medical Society had to back down, because it proved it didn't have it, for the reason that it was my opinion throughout this whole controversy that if it ever came to a showdown between the Society and the members of the Society who were hospital staff physicians, they would stick with the hospital rather than with the Society.

Q.—Then, why didn't you say it didn't have any control at all about anything, about any of the staffs? *A.*—Because it never would have gone through the Society in that form. In other words, the letter would have gone out, and the motion would have been lost.

Q.—In other words, you mean to say you were not really sincere? *A.*—I was subtle; let us put it that way.

(There was laughter in the courtroom.)

THE COURT:—Young man, I don't want any more outbursts of laughter like that. Haven't you been in the courtroom before?

A Man in the Courtroom:—Yes, sir.

THE COURT:—Well, you learn not to laugh, or else you will go out.

By Mr. Lewin:

Q.—Do I understand that it is your testimony that although you put those two recitals there in the resolution, you did not mean them? Is that what it comes down to? *A.*—Well, I wouldn't go that far, Mr. Lewin.

Q.—Did you mean them, or didn't you mean them? *A.*—I said in the first one—the gist of the words—

"Whereas, The Medical Society of the District of Columbia has an apparent means of hindering the successful operation of Group Health Association, Inc.—"

Q. (Interposing)—Did you mean that? *A.*—I meant just that, if you underscore the word "apparent." It appeared on the surface that it had.

Q.—It is not underscored, but let us assume it is underscored. Did you mean it as it is written if you underscore the word "apparent"? *A.*—Yes.

Q.—Now, the second one. Did you mean that? *A.*—"Whereas, The Medical Society of the District of Columbia has no direct control over the policies of such hospitals as determined by their lay boards of directors, except through its control of its own members serving on their medical staffs; . . ." That is a statement of fact. That is the only possible way they could control the hospital.

Q.—Did you mean that? *A.*—I meant that—just as it reads.

Q.—Now, then, did you mean this statement in the third recital:

"Whereas, Conflicts between the Medical Society of the District of Columbia and any local hospitals arising from an attempt to enforce the provisions of Chapter IX, Article IV, Section 5, of its Constitution should be assiduously avoided, if possible, because of the unfavorable publicity that would accrue to its own members"? *A.*—Yes, I certainly did.

Q.—Did you mean that that was the reason why you were offering the resolution: to avoid unfavorable publicity? *A.*—No, there were many other reasons, as I have testified; this was one of them.

Q.—Did you give any other recitals in that recital? *A.*—I gave them in my testimony; I didn't give them in there. But please remember this thing was done in 15 or 20 minutes on my desk late in the afternoon, and I am not proud of it as a literary effort.

Q.—I am not questioning its literary merits. I am trying to see what was meant by it. The reason you gave there, and the only reason, was that conflicts would bring unfavorable publicity? *A.*—Conflict should be avoided for any reason, because it would bring unfavorable publicity.

Q.—That Section 5 was the same Section 5 amended March 3, 1937? *A.*—This is November 1937, and therefore this refers to the final adoption in March; that is correct.

Q.—So, here you have a resolution to take care of the Group Health situation, and the thing you refer to is Section 5; isn't that so? *A.*—It is not to take care of Group Health Association at all; it is to take care of an intramural situation within the Medical Society which had to do with Group Health. Beyond that I will not go, because it is not true.

Q.—The resolving part of the resolution was referred to the Hospital Committee in the first instance? *A.*—That is right.

Q.—Why did you refer it to the Hospital Committee? *A.*—That is the first one that came into my mind. There was no ulterior motive in that. It was a group of physicians each one of whom was on the staff of a hospital, and who were therefore familiar with the situations that develop between staffs and hospitals, and so forth, and it seemed to me that they were the very group of men in the Society who would probably succeed in smothering this effort to send out this letter of which I disapproved so heartily.

Q.—You did not refer it to the Hospital Committee to smother the letter, did you? You moved this resolution in lieu of the letter, and that killed the letter? *A.*—I moved it in lieu of the letter, because I didn't want the letter—If this motion prevailed, the letter does not go out.

Q.—Precisely. *A.*—The letter I left in the hands of the Hospital Committee.

Q.—No, the letter has gone. *A.*—Well, I mean the letter matter is left—Toward whatever the letter was aimed is left in the hands of the Hospital Committee; and not being an officer or member of a committee of the Society, my responsibility was completed there, as far as I was personally concerned. If they had never reported it out, it would have suited me ideally.

Q.—You don't mean that you would refer it to the Hospital Committee for the Hospital Committee to deal with the letter, do you? *A.*—". . . to all phases of this subject," and naturally the purport of the letter and all phases of this subject could not refer to anything but the letter, and that was the matter of approaching the lay boards of the hospitals.

Q.—You knew that the Hospital Committee had one representative of the attending staff of each one of the hospitals, didn't you? *A.*—Oh, yes. Yes, I was thoroughly familiar with it.

Q.—So, if you were going to bring pressure, as you say, or any control over your members serving on the staffs, that would be the logical committee, and that was why you picked it out? *A.*—That is not true.

Q.—Do you mean to say you just picked out the Hospital Committee because it happened to be the first committee which came to mind? *A.*—I already explained that.

THE COURT:—He has explained his reasons for it. Let us not go back and start all over again, please.

Mr. Lewin:—All right, your Honor.

By Mr. Lewin:

Q.—Now, you wanted the Hospital Committee to make recommendations as to the best way of bringing this question to the attention of the Medical Boards. What did you mean by "this question"? *A.*—This question that was proposed in the letter. That was the reference to—What do you call it?

Q.—Group Health Association? *A.*—No, the section. Section 5?

Q.—Yes. *A.*—Yes.

Q.—Doesn't "this question" mean the Group Health Association question? *A.*—No, to Section 5, I suppose. Let me read it:

"Resolved, That the Hospital Committee be, and is hereby, directed to give careful study and consideration to all phases of this subject"—

Now, this resolution was in lieu of the letter, and the subject was proper on the boards of various hospitals—

"and report back to the Society, at the earliest practicable date, its recommendations as to the best way of bringing this question to the attention of the medical boards and boards of directors of the various local hospitals in such a manner as to insure the maximum amount of practical accomplishment with the minimum amount of friction and conflict."

I can't say exactly as to what I had in mind. I can only say that if the Hospital Committee had brought in a report that the matter should be handled along the lines, for instance, I testified this morning that it had been at Garfield, about their letting them in upon determination—

Q.—Letting whom in? *A.*—The staff physicians.

Q.—Of whom? *A.*—G. H. A.

Q.—Oh. *A.* (Continuing)—Either give them privileges in the hospital if qualified—now, please note that: if qualified—or keep them out.

Q.—Do you say anything about it? *A.*—No, I don't say anything about it. You asked me what I had in mind. I am trying to tell you. I say if the Hospital Committee had brought in a report and said, "We recommend that these men all be excluded pending determination of the legality of their practice; or if they be found qualified, they be admitted pending determination of the legality of their practice," that would have satisfied

me a hundred per cent, because I thought it was the way the situation should be handled.

Q.—When you say, "That the Hospital Committee be, and is hereby, directed to give careful study and consideration to all phases of this subject," do you mean by this subject the Group Health Association controversy? *A.*—No, I meant the proposed approach to the hospitals.

Q.—Wasn't the only proposed approach to the hospitals in connection with Group Health? *A.*—I have already stated that.

Q.—The resolution reads:

"*Resolved*, That the Hospital Committee be, and is hereby, directed to give careful study and consideration to all phases of this subject and report back to the Society, at the earliest practicable date, its recommendations as to the best way of bringing this question to the attention of the medical boards and boards of directors of the various local hospitals,"

and there, by "this question," wasn't the question this approach to the hospitals in connection with Group Health? *A.*—In connection, first, with the Section 5 as it applied to Group Health, if you will say that.

Q.—I am agreeable to that. As applied to Group Health Association? *A.*—I think so.

Q.—As I have just stated, it was within a month that you got this Selders application? *A.*—I don't know when it was. I have no recollection of when it came at all.

Q.—Well, we went over that this morning.

THE COURT:—I think that has all been gone over—

The Witness:—If you are asking me if this resolution—

Mr. Laskey:—Wait a minute, Doctor; the judge is speaking.

THE COURT:—I say, I suggest you do not take that up again.

By Mr. Lewin:

Q.—Didn't Dr. Smith speak there in favor of your resolution in this way: Didn't he say he felt that this information could be conveyed to them orally, when they would have nothing to fight back with? Do you remember that? *A.*—No, I have no recollection of it, but it is apparently in the minutes. I suppose he said something like that. I have no control over what he said.

Q.—Do you remember Dr. Hooe, a defendant in this case, saying this:

". . . he was of the opinion that Dr. Willson's substitute offered some sound points, one in particular that which suggests that this committee be composed of members of the hospital staffs. He thought it was inconceivable that the hospitals would not acquiesce to reasonable principles. Another objection he had to Dr. Willson's resolution was that the committee is delegated to take its time and report back to the Society."

Do you remember that discussion? *A.*—Only because I have read this over, and it has been recently refreshed in my mind. I have no control over what Dr. Hooe said.

Q.—Didn't you yourself say this with regard to the Sprigg letter, when you were urging adoption of your substitute:

". . . he felt that the letter carried a veiled threat to the effect that if the hospitals did not comply the Society would unstaff them." *A.*—I think if it is there I certainly said it.

Q.—Did you continue and say that you hoped the Society could control its own members? *A.*—What did I say after that?

Q.—Sometimes you had a little doubt. *A.*—I had a great deal of doubt. That is the reason I introduced the resolution.

Q.—But you hoped for it? *A.*—I hoped the Society was important enough to its members so that they would stick with it rather than with anything else, but I doubted it and still do.

Q.—Right after that didn't you hear Dr. John A. Reed say that he was informed that every hospital in the city was cooperating with the medical profession against the Group Health Association, with one exception? *A.*—Well, I may have heard it. I have read it recently, but I have no independent recollection.

Q.—You remember a discussion of that character occurring? *A.*—I remember a discussion; that is all.

Q.—Then, you say, you were present on November 11, I believe, when the Hospital Committee reported? *A.*—That is my recollection, yes.

Q.—The chairman of that Hospital Committee was the defendant Warfield; is that so? *A.*—I believe so.

Q.—Wasn't he reporting pursuant to the requirements of your resolution, which had been passed? *A.*—Absolutely.

Q.—Do you remember that his report was rejected because it was not strong enough? *A.*—I remember it was rejected on a motion of somebody.

Q.—Wasn't it rejected because it simply said— *A.* (Interposing)—What was the language?

Q.—Well, let us find it.

"Dr. J. Ogle Warfield, Jr., chairman of the Hospital Committee, was recognized. He submitted the following report, pursuant to the resolution which was adopted by the Society on the evening of November 3."

That was your resolution? *A.*—That is my recollection.

Q. (Reading):

"'In view of the resolution adopted by the Medical Society of the District of Columbia on the evening of Nov. 3, 1937 the Hospital Committee held a meeting, at my office, on the evening of Nov. 9, 1937 and recommends that the Medical Society of the Dist t of Columbia send the following resolution to the Boards of Directors those hospitals"—

A. (Interposing)—No, to the Medical Boards.

Q. (Continuing reading):

"'to the Medical Boards of the various local hospitals for interpretation to the Boards of Directors of those hospitals.'"

A.—That was a change right there, you see, from the original proposal, which was a direct approach to the boards of directors.

Q.—You mean this was a direct approach? *A.*—No, the letter for which mine was a substitute was a direct approach to the boards of directors.

Q.—Your substitute contemplated approaching the boards of directors through the medical staffs? *A.*—Not at all. The original letter contemplated that. My motion tried to stop its being done.

Q.—Doesn't this do that same thing? *A.*—No: ". . . send the following resolution to the Medical Boards" of the different hospitals.

Q.—Isn't that what you advocated? *A.*—No, I didn't advocate any action; I simply made the resolution.

Q.—I don't know what your point was with regard to the letter. The letter was to go directly to the directors? *A.*—That is what I am trying to say. The Sprigg letter was to go directly to the directors.

Q.—You didn't like that? *A.*—I didn't like its going out at all. I didn't like its referring to Section 5, which, as I have testified, was not in my favor. Then, here, the original proposal was to approach the boards of directors. My resolution stopped that and referred the matter to the committee, and then the committee came in on November 11 and urged sending the following resolution to the medical boards of the hospitals, which is a different proposition.

Q.—Your resolution had pointed out that the way to approach the problem was through the medical boards? *A.*—No, that is not my recollection.

Q.—Except for the control exercised over the medical staffs? *A.*—Over its own members—control over its own members of the Society who happened to be serving on hospital staffs. That would include, of course, more than the medical board; it would include the courtesy staff as well.

Q.—And courtesy staffs have no influence as to who is to be elected to the staffs of hospitals? *A.*—No. My statement referring to the control of the Society over its members on hospital staffs included the attending staffs and the courtesy staffs.

Q.—This was what Dr. Warfield suggested:

"That the hospitals accept patients from Group Health Association, Inc., provided that Group Health Association, Inc., is responsible for their financial obligations." *A.*—Yes.

Q. (Continuing):

"That these patients only be treated by the attending, associate, assistant and courtesy staff physicians of the respective local hospitals."

A.—Yes. Now, what is it?

Q.—That would mean, would it not, that the Group Health Association patients could be treated by people like Dr. Scandiffio, who was on the courtesy staff of Sibley, for instance? *A.*—Yes, or—Yes.

Q.—Then, is it not true that one doctor in the discussion, Dr. Daniels, said that he was of the opinion that members of the local medical staffs of hospitals were required to be members of the Medical Society of the District of Columbia, and that he would inquire if any of the members of the staff of Group Health Association were now members of the Society? Do you remember that? *A.*—It is so recorded in the minutes. I have refreshed my memory of it recently; I have no independent recollection of it.

Q.—Don't you understand his point to be that under that resolution suggested by Dr. Warfield, or that communication suggested by Dr. Warfield, a man like Dr. Scandiffio, who was still a member of the District Medical Society, might be a member of the courtesy staffs of some of the hospitals and, therefore, could treat Group Health Association patients? *A.*—

Yes. He apparently was trying to get information as to whether any of the staff of Group Health Association were still members of the Medical Society of the District of Columbia.

Q.—Didn't the chairman, Dr. Neill, give him that information and say—

Mr. Richardson:—We object to this examination as being simply a repetition of what is in the minutes.

THE COURT:—Yes. You are asking for his interpretation of what other men said in that meeting. You might as well ask for my interpretation or the interpretation of any other person in the room. After all, it is a matter of reading the language and getting the appraisal of the particular individual. It is not evidence at all. It is not proper cross-examination.

Mr. Lewin:—I am sure that the strict rule would confine a great deal of the examination to the contents of the documents, but I understood your Honor to—

THE COURT:—(Interposing) I will allow you to examine within reasonable points, Mr. Lewin, but I want to try to avoid your putting to other witnesses the words of some other person. When it comes to dealing with their own language, I want to give you considerable leeway, because that at times involves motive.

Mr. Lewin:—I was not suggesting that Dr. Willson said these things. I have been pointing out who said them, and I understood Dr. Willson was present.

THE COURT:—Well, I will have to sustain the objection.

Mr. Lewin:—May I ask this:

By Mr. Lewin:

Q.—Do you recall what Dr. Neill said in answer to that question? *A.*—No.

Q.—Could you refresh your recollection by looking at the minutes? *A.*—It would call up no recollection independent of the fact that I would assume the minute was correct if it were read to me. I would have no recollection of it, I am sure.

Mr. Lewin:—If I may, I should like to read that portion to the jury as a basis for questions.

THE COURT:—I do not think it can be the basis of questions unless it involved his own recollection. How could it be?

Mr. Lewin:—Because I think it leads up to something else: to what happened to that resolution, which was the outgrowth of his resolution.

THE COURT:—What is your question?

Mr. Lewin:—I should like to read now a paragraph of that which is in evidence already. I thought that was the procedure being followed.

THE COURT:—Well, read it and see what becomes of it.

Mr. Laskey:—In that connection, your Honor, the only question was whether it refreshed his recollection. He said he did not know it.

Mr. Lewin:—This is the procedure that has been followed on cross-examination time and time again because of these lengthy documents.

THE COURT:—That is very true, but there has got to be some limit. I have indicated the limit: that they are those things which bear upon the witness' own testimony, upon his own acts in those meetings, or his words—what he may have written or what he may have said—but it is going far beyond what I have ever intended, if you should read something there in the minutes that somebody else said and ask the witness on the stand to interpret it.

Mr. Lewin:—I was not asking for an interpretation.

THE COURT:—That is what it seems to come down to. I will sustain the objection.

By Mr. Lewin:

Q.—Do you know what happened to that resolution of Warfield's? *A.*—It was rereferred. I know that it was rereferred to the committee.

Q.—Do you know the grounds on which it was referred? *A.*—It was rereferred to the committee. I know there was some discussion about it, and my recollection is again refreshed from having read these things over in the last few weeks. There was a question as to whether the provision of the original report would cover G. H. A. physicians practicing at the hospitals—I mean some way to prevent their practicing, or would not prevent it; something of that sort. That is my recollection of it. It was along that line.

Q.—Then, wasn't a motion made by Dr. Yater to recommit it because there was no assurance given that Group Health Association doctors were not on the staffs? *A.*—That is my recollection.

Q.—Did you vote for it? *A.*—I have no recollection, Mr. Lewin. Let me see it. No, I have no recollection one way or the other. My best belief would be that I didn't, because it wasn't—because I wasn't in sympathy with that method of approach at all.

Q.—The resolution was seconded and finally adopted, according to the minutes. Do you know who seconded it? *A.*—No, I don't.

Q.—Isn't it true, then, that on December 1, when you were also present, Dr. Warfield's committee made a further report pursuant to that resolution recommitting it? *A.*—Yes. Well, Mr. Lewin. I remember distinctly having been present at the meeting of November 11. I have no independent recollection of having been at that meeting of December 1. I may have; I simply don't recall whether I was there or not.

Q.—But you do know, do you not, that pursuant to that report of December 1 the resolution was adopted? *A.*—Oh, yes. At least, I know that from the minutes, yes.

Q.—You do know that the effect of that was— *A.*—(Interposing) To call the attention—To request the medical boards of the hospitals to call the attention of the boards of directors to what I have now learned was the Mundt Resolution.

Q.—That meant, did it not, that if the hospitals adopted that, no person who was not made a member of your Society, or any person who should be expelled from your Society, would automatically lose his courtesy staff privileges or fail to gain them?

Mr. Laskey:—I object to that as calling for a conclusion.

THE COURT:—The objection is sustained.

By Mr. Lewin:

Q.—What was your understanding of the purpose of calling the hospitals' attention to the Mundt Resolution? *A.*—Well, Mr. Lewin—

THE COURT:—(Interposing) That is the same question, is it not?

Mr. Laskey:—The only difference is that now he asks him if it was not his understanding.

THE COURT:—It seems to me to be the same question.

Mr. Laskey:—We object to it.

Mr. Lewin:—Is the objection sustained to that question?

THE COURT:—Yes.

By Mr. Lewin:

Q.—Did you follow out the rest of the procedure followed by the Hospital Committee under that resolution? *A.*—I don't believe I understand your question, quite, Mr. Lewin. What procedure?

Q.—Did you know that later, in February of 1938, a resolution was passed by the Society, asking for a report on what the status of Group Health doctors was in the various hospitals? *A.*—I believe that that matter has again been refreshed in my memory from various minutes recently. I have no recollection of it. You misunderstand. The resolution I had made was just to prevent action by the Medical Society which I disapproved of. My interest has waned from there on. I have done my best to accomplish what I wanted, and I wasn't materially interested in the matter one way or the other.

Q.—Did you object to the later proceedings taken by the Hospital Committee and the Society after your resolution with regard to admitting Group Health doctors into hospitals? *A.*—Well, the proposal—As I have testified, I don't even remember being present at that meeting when it came up; and when it got to the hospital boards, as I testified this morning, it was apparently in my absence, and the first chance I had anything to do with it was when the medical board came back with the recommendation that we move to rescind it, and I moved to rescind it.

Q.—But you knew that there was such a recommendation at the time you were passing on Group Health doctors' applications? *A.*—No, I have no recollection of that at all. I don't even remember when I was passing on Group Health applications.

Q.—Didn't you know that if that recommendation was followed, Group Health doctors could not be in the hospitals, regardless of their personal qualifications? *A.*—It didn't make any difference what I knew about it. I was the one who moved that it be rescinded, so I couldn't have been very much in favor of it, since I moved to rescind it.

Q.—Well, did you ever move to rescind the action of the Hospital Committee? *A.*—What action?

Q.—The action of the Hospital Committee in sending out questionnaires and getting facts as to the status of Group Health doctors in the hospitals? *A.*—I don't even know. I was present at those meetings and had no interest.

Q.—I think you testified that you did not raise any objection to Dr. Scandiffio's treating babies whom you had delivered? *A.*—That is correct.

Q.—As a matter of fact, isn't it the ordinary practice of an obstetrician to carry the case through until after the birth of the baby and then to give the case, as far as the health of the baby is concerned, up? A.—It varies greatly in different

jurisdictions and according to the practice of different individuals. I know one very prominent obstetrician in town who refuses to let a pediatrician get into the hospital over his dead body to look at a baby he has delivered. As far as I am concerned, as I told you this morning, the sooner I get rid of them, the better. But if there is no pediatrician in attendance—I mean if the patient—the father or the mother of the child—does not request a pediatrician, I naturally, to the limited extent of my ability with babies, keep track of them as long as they are in the hospital, to see that they are doing all right until they go home, and then I have them call a pediatrician.

Q.—But you do not call Dr. Scandiffio yourself? *A.*—No, the patient calls him; I wouldn't call him in. I follow the usual procedure of telling the nurse to call him up. I never contact pediatricians.

Q.—You do not contact Dr. Scandiffio yourself? *A.*—No, I have no recollection of having asked him.

REDIRECT EXAMINATION

By Mr. Laskey:

Q.—Dr. Willson, was your action in voting as you did with respect to Dr. Scandiffio influenced or controlled by the fact that he was a G. H. A. doctor? *A.*—Not at all. It had nothing to do with it. It was controlled by the fact that he had violated, as I testified—he had violated provisions of the constitution. On this violation of Section 5 I was very reluctant to vote for his expulsion, because I disliked it so, but I did vote against him on the whole ground of the sustaining of charges of violating three or four different provisions of the constitution.

Q.—Was your action with respect to voting as to Dr. Selders, whether he should be admitted to the staff, courtesy or otherwise, of the Columbia Hospital, controlled or influenced at all by the fact that he was a G. H. A. doctor?

Mr. Kelleher:—We object to that as being leading, your Honor.

THE COURT:—The objection is overruled.

The Witness:—Will you repeat the question?

(The pending question, as above recorded, was read by the shorthand reporter.)

The Witness:—No. There was no question in my mind whatsoever that he was not qualified in his original application to do the work he requested to do; therefore, there was no necessity of the other thing coming up. When he separated his requests and came up—

THE COURT:—I would not go all through that again. The question is whether his connection with G. H. A. influenced you in any way.

The Witness:—No.

THE COURT:—That is his question.

By Mr. Laskey:

Q.—Who is Dr. H. J. Russell McNitt? *A.*—He is a member of the staff and one of the attending surgeons in gynecology at Columbia Hospital, now on duty with the army in Denver, and a member of the Washington Gynecological Society and a member of the Medical Society of the District of Columbia.

Q.—How long have you known him? *A.*—Oh, I should say fifteen years.

Q.—What do you know, if anything, about his qualifications to pass on the medical efficiency of a doctor who applies for hospital privileges?

Mr. Lewin:—That is objected to. There is no evidence that Dr. McNitt did pass on him. He simply transmitted the gynecological disapproval.

By Mr. Laskey:

Q.—Was Dr. McNitt a member of the gynecological board? *A.*—Society?

Q.—Society? *A.*—Yes.

Mr. Laskey:—I think that is some evidence that he passed on it.

Mr. Lewin:—Well, he was a member along with I don't know how many others.

THE COURT:—Mr. Laskey, the doctor has said that the society was made up of experts in that line.

Mr. Laskey:—Yes, I do now recall that in a general way.

Mr. Richardson:—There is just one thing further: Mr. Lewin intimated that all the doctor relied on was the letter of Dr. McNitt. I wanted to show that that was some reliance.

THE COURT:—Well, you may ask him what confidence he had in Dr. McNitt.

By Mr. Laskey:

Q.—Tell us what, if any, confidence you had in any recommendation that Dr. McNitt might make. *A.*—Well, I know Dr. McNitt very well, and I know of his work on the staff of the hospital, and I also know that he is a diplomate of the American Board of Obstetrics and Gynecology, and that he has the highest evidence of professional ability in that specialty that any man can provide in the United States of America.

Q.—Just what does that mean? *A.*—It means that he has passed an examination before the American Board of Obstetrics and Gynecology—written, oral, and practical—and is certified as a specialist in obstetrics and gynecology, being competent to do so, and is limiting his work to that specialty.

Q.—Is that a national organization? *A.*—That is a national organization.

Mr. Laskey:—I will ask to have this letter of Dec. 30, 1937 from Dr. McNitt to Colonel Ashburn, marked as Defendants' Exhibit 51.

Mr. Laskey:—I will ask Mr. Richardson to read it.

Mr. Richardson:—This is under the letterhead of the Washington Gynecological Society, Washington, D. C., and is dated Dec. 30, 1937 from the Office of the Secretary:

DEFENDANTS' EXHIBIT 51

"Col. P. M. Ashburn
Supt. Columbia Hospital
Washington, D. C.
"Dear Col. Ashburn:

"I am directed to report on the following physicians whose names were submitted to the Society for advice, concerning qualifications for courtesy privileges on your staff: Drs. Oliver C. Cox, Richard Castell, Raymond Selders.

"We do not consider them qualified to do operative obstetrics.

"Sincerely yours,
"H. J. Russell McNitt, M.D.,
"Secretary."

RE-CROSS EXAMINATION

By Mr. Lewin:

Q.—Dr. McNitt, being a member of the staff at Columbia, was available to you right there in Columbia to pass on applications, was he not? *A.*—As far as his individual—You mean in an individual capacity?

Q.—Yes. *A.*—Oh, yes, yes.

Q.—It was not necessary in order to get his individual judgment on Dr. Selders, to send his application anywhere, was it? *A.*—No; that is correct.

The jury left and the attorneys conferred at length with the Court who gave them the following record of his decision:

DEFENDANTS OFFER OF PROOF

On the question of the illegality of Group Health Association, Inc., and the receipt by it from Home Owners Loan Corporation of $40,000 illegally, the defendants offer to prove as facts and circumstances known to these defendants during the times herein involved:

1. The charter of Group Health Association, Inc., and the amendments thereto which are contained in a stipulation herein.

2. The By-laws of Group Health Association, Inc., and amendments thereto which were in effect during the period of the indictment and which are contained in a stipulation herein.

3. The facts known to these defendants pertaining to the actual operations of Group Health Association, Inc., which the defendants say tend to show that Group Health Association, Inc., was a corporation practicing medicine contrary to law and engaged in the business of insurance contrary to law. The said facts will show among other things the following:

(*a*) That Group Health Association, Inc., entered into contract with Home Owners Loan Corporation wherein it offered as a corporation to render and deliver to Home Owners Loan Corporation certain medical services therein described for a consideration of $40,000.

(*b*) That Group Health Association, Inc., as a corporation contracted with its members to furnish them medical service, and that Group Health Association, Inc., did furnish medical service to its members.

(*c*) That Group Health Association, Inc., as a corporation employed doctors to work in a clinic, rented and operated by Group Health Association, Inc., there to treat and render medical service to the members of Group Health Association, Inc., pursuant to the contract between Group Health Association, Inc., and its members.

(*d*) That the trustees of Group Health Association, Inc., together with the lay administrator and other lay employees of Group Health Association, Inc., dominated and directed the rendering of medical service by Group Health Association to its members.

(*e*) That no doctor could be employed or discharged by Group Health Association, Inc., without the consent and approval of the board of trustees, all of whom were laymen.

(*f*) That Group Health Association, Inc., as a corporation, was practicing medicine and was not a broker which brought

together the members of Group Health Association and the doctors who rendered medical service to them.

4. That Group Health Association, Inc., was subsidized by Home Owners' Loan Corporation and received from Home Owners' Loan Corporation money and other things of value belonging to the United States, contrary to law.

5. That Group Health Association, Inc., entered into a contract with Home Owners' Loan Corporation wherein it promised to perform certain medical service for Home Owners' Loan Corporation and, in return, received money and things of value belonging to the United States, contrary to law.

6. The members of Group Health Association, Inc., assigned to Group Health Association portions of their salaries, due or to become due, from Home Owners' Loan Corporation, contrary to law, and that deductions were made from the said salaries by Home Owners' Loan Corporation and paid to Group Health Association, Inc., contrary to law.

7. Resolutions were passed by Home Owners' Loan Corporation authorizing contract and amended contract with Group Health Association, Inc., for the furnishing of medical service by Group Health Association to Home Owners Loan Corporation, all without authority of law. That resolutions were passed by Home Owners' Loan Corporation approving By-Laws of Group Health Association, Inc., which in substance and in effect provide that said Group Health Association, Inc., should at all times have on its board of trustees at least two members thereof who were designated and appointed by Home Owners' Loan Corporation, all without authority of law.

8. That Home Owners' Loan Corporation received legal opinion from its attorneys in substance holding and conceding that Group Health Association, Inc., was engaged in the insurance business, contrary to law, and engaged in the practice of medicine, contrary to law, unless and until its By-laws were changed, and as a result thereof said By-laws were so changed, and that these alleged conditions, or part thereof, existed until at least May 2, 1938.

9. That the Acting Comptroller General of the United States held and found that the payments by Home Owners' Loan Corporation to Group Health Association were made and incurred without authority of law to the knowledge of the defendants. That said Acting Comptroller General also held and found that the aforesaid contract between Group Health Association, Inc., and Home Owners' Loan Corporation was a contract for the sale of medical service, contrary to law to the knowledge of the defendants.

10. That a duly authorized proper committee of the House of Representatives of the United States held and found that payments by Home Owners' Loan Corporation to Group Health Association, Inc., were an illegal diversion of the money of the United States, to the knowledge of the defendants.

11. That the United States District Attorney of the District of Columbia and the Corporation Counsel of the District of Columbia held and found that the operations of Group Health Association, Inc., were contrary to law up to the time of the entry of the decree in Group Health Association, Inc., vs. Moor, et al., to the knowledge of the defendants.

12. That several attorneys consulted by defendants advised that the operation of Group Health Association, Inc., was contrary to law, and defendants so believed.

13. That several attorneys consulted by defendants advised that Chapter 9, article IV, section 5, of the constitution of the Medical Society of the District of Columbia was a legal provision, and defendants so believed.

14. That several attorneys consulted by defendants advised that the Principles of Ethics of the American Medical Association and all thereof were legal, and defendants so believed.

15. That several attorneys consulted by defendants advised that they had a legal right to enforce chapter 9, article IV, section 5, of the constitution of the Medical Society of the District of Columbia, and defendants so believed.

16. That all of defendants' acts and doings were for the purpose of advancing their own interest and to protect their own society association rules of ethics and method of distributing medical services and to repel an assault on the same by Group Health Association, Inc., as distinguished from the purpose of restraint as alleged in the indictment.

17. That the defendants believed that the $40,000 and other things of value paid by Home Owners' Loan Corporation to Group Health Association, Inc., was an illegal diversion of the money of the United States.

18. That belief on the part of the defendants that Group Health Association, Inc., was illegally engaged in the practice of medicine, had received public funds unlawfully, and illegally engaged in operating an insurance company, was in part the basis for the following acts of defendants:

(*a*) Enforcement of chapter 9, article IV, section 5, of the constitution of the Medical Society of the District of Columbia, by disciplinary proceedings.

(*b*) The issuance of the so-called "white list."

(*c*) Refusal, if any, to consult with the doctors employed by Group Health Association, Inc.

(*d*) Enacting and distributing a resolution of the Medical Society of the District of Columbia dated Dec. 1, 1937.

(*e*) The correspondence conducted between the defendants and between defendants and third persons relating to Group Health Association, Inc.

(*f*) Discussions, remarks, motions, and other pertinent acts of defendants, relative to Group Health Association, Inc., its doctors, memberships and operations.

19. That because of the belief of the defendants in the illegality of the operation of Group Health Association, Inc., and the illegality of the payment of certain moneys by Home Owners' Loan Corporation to Group Health Association, Inc., the acts and doings of defendants in the premises were reasonable argument and persuasion, or reasonable regulation of professional practice.

20. That the illegality or belief in the illegality of Group Health Association, Inc., brought into operation chapter 9, article IV, section 5, of the constitution of the Medical Society of the District of Columbia. The said section 5 is valid and it was and is lawful for the Medical Society of the District of Columbia to refuse to approve a contract between one of its members and a corporation illegally practicing medicine, or which it reasonably thinks is illegally practicing medicine. If this were not true, the Medical Society of the District of Columbia would be required to approve a contract between one of its members and a corporation illegally practicing medicine. The result of such an approval would subject the doctor in question and the Medical Society to a prosecution for violation of a law. The action of the Medical Society of the District of Columbia in refusing to approve such a contract is not evidence of a conspiracy in restraint of Group Health Association, Inc., but directly an effort to prevent its members from contracting with a corporation illegally practicing medicine. If the Medical Society of the District of Columbia cannot so enforce the provisions of its constitution it will be destroyed.

PRESENT RECORD ON ISSUE OF ILLEGALITY AND HOME OWNERS' LOAN CORPORATION PAYMENT

The illegality of Group Health Association, Inc., and of the Home Owners' Loan Corporation's payment to Group Health Association, Inc., are substantially in issue in the record.

The contract between Group Health Association, Inc., and Home Owners' Loan Corporation under and by virtue of which Group Health Association, Inc., sold medical service to Home Owners' Loan Corporation for $40,000 has been widely discussed in the record. (R. 21, 24, 25, 561, 566, 589, 603, 632, 639, 692, 709, 729, 791, 794, 804, 810, 1395, 1536, 1537, 1551, 1696, 1705, 1724, 3524, 3581, 3607.)

The payment of $40,000 made by Home Owners' Loan Corporation to Group Health Association, Inc., has also been developed in evidence. (R. 94, 603, 687, 702, 749, 810, 1720, 1772, 1773, 1774, 1778, 1783, 1784, 3519, 3598, 3612.) (And see U. S. Exhibits 203, 114, 112, 113, 136, 157, 159, 195, 196, 197.)

The question of the economic soundness of Group Health Association, Inc., due to the Home Owners' Loan Corporation's payment referred to, appears in the record. (R. 587, 588, 615, 686, 701, 748, 1472, 1723.)

The illegality of the operations of Group Health Association, Inc., has been substantially opened up in the record. (R. 737, 739, 795, 797, 1590, 1646, 1649, 1655, 1658, 1669, 1679, 1679-A, 1680, 1695, 1698, 1699, 1700, 1703, 1704, 1708, 1716, 1719, 1721, 1722, 1723, 1725, 1730, 1770, 1772, 1773, 1774, 1776, 1778, 1783, 1784, 1789, 1795, 2025, 2027, 2155, 2232, 2332, 2333, 2334, 2464, 3597, 3598, 3609, 3610.)

The Government offered evidence to show that the decision of Justice Bailey on the question of illegality was publicized. (R. 2025, 2027, 2500, 2572.)

Likewise the Government offered evidence to show that various hospitals based their action on the pending question of illegality. (R. 2452, 2025, 2027.)

The refusal of Group Health Association, Inc., to furnish copies of its By-laws and other pertinent information to defendants, and the necessity for revamping such By-laws to overcome apparent illegality also is developed in the record. (R. 794, 797, 798, 829, 600, 688.)

Testimony is in evidence showing illegal operations based on unprofessional practice as identified in the opinion of the Court of Appeals. (R. 317, 318, 321, 1444, 615, 742.)

The record citations noted establish that the issue of illegality, both with respect to the operations of Group Health Association, Inc., *in the practice of medicine* and the doing of an insurance business, as well as the *illegality of payment received from Home Owners' Loan Corporation,* appear at length in the minutes, correspondence, resolutions, and hospital testimony, which has been read to the jury. This is particularly true with respect to the correspondence of the officials of the American Medical Association and the so-called Woodward article, which has been offered and read to the jury by the Government.

The summary of evidence which we propose to introduce is intended to complete the issues before the jury under the testimony already submitted.

MEMO: RE DEFENDANTS' OFFER OF PROOF

The immediate question involves admissibility of certain evidence set forth in defendants' offer of proof. By understanding between court and counsel the offer covers in detail a broad range of evidence. In connection with evidence already in, it forms the basis for defendants' claim that Group Health Association, Inc., was illegally engaged in the practice of medicine. It is contended that the Anti-Trust Act does not embrace a business illegal in its nature, and that the restraints forbidden relate only to lawful trade and commerce.

Further, it is contended that even if it be held that Group Health Association, Inc., was not an illegal enterprise, nevertheless defendants honestly believed it to be so, and therefore in defense may rightfully justify their acts by proving such beliefs and the facts supporting them, including advice of their counsel, an opinion of the Comptroller of the Treasury and a report of a congressional committee. It is argued that evidence of this kind is material and competent to refute a criminal intent, by showing that defendants' acts were taken only to protect themselves, the profession and the public interests against supposed illegal activities of Group Health Association, Inc., and that if restraints did result they were under the circumstances reasonable.

The questions thus presented are important. The future course of the case awaits their determination. For obvious reasons my views must be but briefly stated.

1. As to illegality of Group Health Association, Inc., I do not think it was engaged in medical practice. It should be regarded merely as a convenient medium adopted by a group of persons for concerted action to secure for themselves and their dependents medical care on a fixed prepayment plan. The association did not render medical service. It simply provided the personnel and facilities pursuant to the corporate plan adopted by the members. Licensed physicians so employed treated the patients without interference of the lay officers. Nor were the cooperative non-profit features of the plan calculated to commercialize or exploit the practice of medicine. In an actual, realistic sense, which I think is contemplated by the "Healing Arts Practice Act," the doctors alone rendered the medical service. Only they were practicing medicine.

The situation was not altered by the contract whereby $40,000 were furnished by Home Owners' Loan Corporation. If we assume the transaction to have been a wrongful diversion of public funds, that did not outlaw the business of Group Health Association, Inc., any more than would have been the case had a private trustee misapplied trust funds to the benefit of Group Health Association, Incorporated. However culpable, it would not have the effect of transforming the corporate business into a lawless venture.

2. I do not think evidence of defendants' belief as to illegality of Group Health Association, Incorporated, or the reasons on which it rested, is material. At best it could bear only on motive—not intent. However impelling the reasons which may lead one to commit a criminal act, they cannot legally justify or excuse, though they may mitigate. Motive, that ultimate desire or purpose which leads to the formation of the intent to do a prohibited act, is often easily confused with the intent itself; but the two are distinct, and only the latter presents a relevant issue. Then too, mistake of law will not ordinarily excuse. I do not understand that counsel dispute this general rule. But they do argue that one element of the offense here charged is a specific intent to restrain trade, hence that defendants' belief becomes material as bearing on the particular purpose alleged. I doubt that as defined by the statute the offense technically involves a specific intent; but if so, it is not of a nature to bring the case within the very limited field in which ignorance or mistake of law can legally bear upon the intent.

3. Further, I understand the argument to be that an honest and reasonable belief that Group Health Association, Inc., was operating illegally would, under the appellate court's decision, afford the defendants a proper ground to justify restraints "as reasonable regulations of professional practice" to protect and support their standards, methods, and economic interests. But the thesis is too broad. The language of the court has reference to the right of medical societies to reasonably regulate and discipline *their members,* to the end of raising and maintaining high standards of medical practice. Control, of course, *is over the members only,* and that must be limited to reasonable restraints in their practice of the profession. Even within that field I fail to see how defendants' belief, or the grounds giving rise to it, can have any relevancy to a question concerning the reasonableness of such regulatory controls. Reasonableness of belief is not the issue.

4. Finally, it is urged that the belief of illegality would supply a reason to support defendants' right of persuasion and argument in protecting their standards of professional practice and their economic interests. Of course legitimate argument and persuasion was and is available in seeking those objectives. But the contention is beside the point, for no restraint based on argument and persuasion is alleged, nor could it constitute a legal charge.

The reasons stated lead me to the conclusion that the proof offered by defendants is not admissible on any of the grounds urged. Therefore the Government's objection is sustained and the offer rejected.

The offer of proof, as I have treated it, is the written paper filed March 14, 1941 as orally amended, revised and explained by counsel for the defendants. Many of the documentary items contained in the written offer are already in evidence. They can be dealt with later in keeping with this decision.

JAMES M. PROCTOR, Justice

Dated March 17, 1941.

(Whereupon, at 2:50 o'clock p. m., the court adjourned until Thursday, March 27, 1941, at 10 o'clock a. m.)

MARCH 27—MORNING

TESTIMONY OF DR. ELIJAH WHITE TITUS

DIRECT EXAMINATION

By Mr. Leahy:

Elijah White Titus said he has been a practicing physician in Washington since 1911. He graduated from George Washington University Medical Department in 1910. He had one year and three months at the Columbia Hospital for Women and in the fall of 1919 received an appointment as resident gynecologist of one of the hospitals in the city of New York and had one year there. He then began to limit his work to obstetrics and gynecology. From 1912 until 1919 he was assistant deputy coroner part of the time and deputy coroner part of the time. He belongs to the District of Columbia Medical Society and is a fellow of the Washington Gynecological Society and also of the Galen Hippocrates Society. In the gynecologic society he has held the office of president. He was chairman of a committee in 1937. Its primary object was to assist hospitals in determining the qualifications of applicants for the privilege of practicing on the hospital staffs. This committee was appointed by the society. The society felt that such a committee was necessary. The hospitals had a definite responsibility to the public in the men that they admitted to practice, and especially in the special branches. So the society approved a form letter which was sent out, inviting the hospitals, if they had applications to send them. The witness was made a member of that committee in 1936. Dr. Kane was chairman. The committee consisted of the witness, Dr. Jacob Kotz and Dr. Mundell. In 1937, in October, that committee was dismissed and the witness was appointed chairman of the committee along with other members—Dr. Kane, Dr. Kotz, Dr. Martel and Dr. Sylvester and was fairly active that year.

Q.—How long have you been on the staff of Columbia? *A.*—I have had some connection with the staff since I left there as a resident, which was in 1911. I now am one of the attending gynecologists and chairman of the medical board and at the present time I am a member of the board of directors of the hospital.

Q.—Do you recall now whether your committee which you just told us had anything to do with the investigation of the qualifications of Dr. Selders? *A.*—Yes. I remember that quite well.

Q.—Can you just tell us what your committee did toward determining the qualifications of Dr. Selders?

A.—Our committee received a request from Columbia Hospital for Women and we had a copy of the application which gave his references and, at the same time, made certain statements as to the amount of surgery which he had done, both in Houston, Texas, and Worcester, Mass. Shortly after we

received that communication we set out to follow up the references in Houston, Texas, and Worcester, Mass., and got replies from those sources.

Q.—Do you recall how many replies you received? *A.*—We received two.

Q.—Do you recall from whom you received them? *A.*—One was from Dr. Robert A. Johnson, a rather prominent obstetrician and gynecologist in Houston. The other was a letter from a Dr. Berry, one of the surgeons on the staff of the Worcester City Hospital, and it came to me through Dr. Edward Bullard of the surgical staff of the Women's Hospital, for this reason. I knew no one in Worcester. I knew Dr. Bullard was a very prominent man who got around a great deal, reading papers and visiting other medical societies, and he probably would have someone he knew there; and Dr. Berry was the man he wrote to, and he forwarded Dr. Berry's letter to me.

Q.—Did the letter from Dr. Johnson at Houston come directly to you? *A.*—It came directly to me.

Q.—Have you the letter here? *A.*—I have not.

Q.—Do you know where it is now? *A.*—Dr. Johnson made a request that the letter be destroyed.

Q.—Did you destroy it in accordance with that request? *A.*—Well, he gave his reasons why he requested it, and I did destroy it.

Q.—Why did he request you to destroy it? *A.*—His statement was that the contents of this letter were so unfavorable and he had made a frank statement of the thing, and he felt he would rather have it destroyed for those reasons.

Q.—Did you destroy it? *A.*—I did.

Q.—Without going into the character of the contents, were they favorable or unfavorable to Dr. Selders? *A.*—They were quite unfavorable. That is the reason he asked me to destroy it, he said.

Q.—Did you get any letter from Dr. Berry through Dr. Bullard? *A.*—I did.

Q.—What did you do with that letter? *A.*—I have it in my pocket.

Q.—Will you produce it, please? *A.*—There is a personal note here that I do not think you want (producing papers).

Q.—Is this (indicating) the one dealing with the qualifications of Dr. Selders? *A.*—Yes.

Q.—Do you have the original of this? *A.*—No; I never did have the original of it. The letter was addressed to Dr. Bullard and he made a copy and sent it to me.

Mr. Leahy:—If your Honor please, I offer the letter in evidence as Defendants' Exhibit 52.

DEFENDANTS' EXHIBIT 52

"Dr. Edward A. Bullard,
580 Park Avenue,
New York City, New York.
"Dear Cindy:

"Your letter comes inquiring about Dr. Raymond Selders. I have discussed him with the superintendent, Dr. MacIver and with one of the chief surgeons of the Worcester City Hospital. He was resident there from July 1, 1936 to July 1, 1937. The story goes that he was a graduate of the University of Oklahoma and then practiced in Dallas, Texas, for ten years. Apparently he took a surgical internship in there somewhere. Then he went to the University of Pennsylvania, where he had, they think, two years of a basic postgraduate course in surgery. He came from there here for the completing year in practical surgery.

"While here, he is listed as having taken active part in two hundred and seventy-three operations, one hundred and ninety of which would be classed as major and eighty-three as minor. Dr. MacIver does not know whether he did any more or whether he did all of these and they could not discover this point without going through all the records. This gives an approximate idea. One gets the impression that he is taking a good deal of time in preparation for his life's work. He is about 46 years of age and now contemplates further preparation. They think he has been married twice.

"The story while here in Worcester is somewhat as follows: when he first came, he seemed to feel the need of expressing his importance. He tried to convey the idea that the surgical interns should look to him for instruction and material. The discrepancy between his age and that of the interns exaggerated their objection to his policy and thus early in his residency there was engendered lack of harmony. This lack continued on through his year of service. He himself was somewhat of an emotional and breezy type which found everything going well some days, while at other times he acted out of sympathy with the world.

"This slightly unstable disposition was evidenced at times in his operative work. Sometimes he showed proper skill while at other times a seeming conceit led to careless and hasty surgery. The visiting men, either through this trait or through the animosity engendered among the house officers, hesitated to trust him with as much work as they would have liked to have done.

"In retrospect, these two men whom I talked with felt that much of his trouble was due to his failure to fit into the picture when he first came. If he had been a bit more thoughtful and patient, he would have gotten off on the right foot and then the resulting harmony would have carried him along in a happy way. Finding himself out of harmony, there was a tendency to get worse rather than better. They feel that perhaps they made a mistake in taking a man so much older than the interns.

"Dr. MacIver felt that he showed perhaps an average skill in his surgical work but that there was certainly nothing startling either about this skill or about his constructive research efforts. He did not go to Dr. MacIver from time to time in a complaining spirit but stuck it out as best he could.

"I judge this picture fits somewhat with the opinion you have already formed about him. Placed under certain conditions I would gather that he could do good and faithful work, but put into a group that is somewhat self sufficient, where he is a stranger feeling it necessary to establish his own importance in the scheme of things, he might repeat the difficulty he had here and find his experience lacking in harmony and efficiency.

"I hope this report will help you. Both the men I talked with were anxious not to injure his chances for the appointment he is seeking. But I told them that you deserved as honest a statement as could be secured and I think I have correctly interpreted their feeling. Dr. MacIver felt that some of the staff liked him better than others and I judge that the member of the staff whom I picked was one of those who liked him the least. He would wish you to give the man all the credit you could. You will have to conclude as to whether this particular type of worker is fitted for the task he is seeking."

"Cordially yours,
"Gordon Berry, M.D."

(There was extended discussion of the possibility of securing a copy of the letter from Houston, Texas.)

Mr. Lewin:—Then I think we ought to wait for the letter to see whether we have any objections to it, rather than to have it characterized now.

THE COURT:—I assume it would be better to wait a reasonable time to see if it comes.

Mr. Leahy:—I am perfectly willing to wait. We have been trying to get it for a week.

By Mr. Leahy:

Q.—Doctor, acting on the information which you received, both from Worcester and from Houston, did your committee form a recommendation as to whether Dr. Selders should be admitted to privileges for general surgery? *A.*—We formed a conclusion, and on the basis of that conclusion we so advised the hospital.

Q.—Did you advise that Dr. Selders was qualified or unqualified? *A.*—Unqualified.

Q.—That was Columbia Hospital? *A.*—That was Columbia Hospital.

Q.—Were other hospitals similarly advised? *A.*—Our committee did not send any conclusion concerning Dr. Selders, as far as I can recall.

CROSS EXAMINATION

By Mr. Lewin:

Q.—Doctor, how much weight did you give this letter from Dr. Berry to Dr. Bullard which has been received in evidence, when your committee came to pass on the application of Dr. Selders? *A.*—I could not very accurately answer that in terms of percentages, but I will say we gave it less weight than the one that came from Houston.

Q.—But you did give this some substantial weight in arriving at your opinion, Doctor? *A.*—It influenced us to a certain extent, in view of the fact that we had received one a little stronger than that, from Houston.

Q.—How did you happen to pick out Dr. Johnson to write to? *A.*—I happened to know that he was a very prominent man in subjects of gynecology at Houston. I had met him.

Q.—Did Dr. Selders give his name as a reference? *A.*—No. He gave us on his application blank a statement saying that he had been in general practice in Houston for, I think, seven years, and in that time had performed something like four hundred and thirty operations. He did not classify them as to whether they were major or minor operations.

Q.—Of course on his application he gave Dr. MacIver's name as a reference, did he not? *A.*—Not on the application he sent to Columbia Hospital, I am sure.

. . . . . .

Q.—Did you see the letter that Dr. MacIver sent to Colonel Ashburn of Columbia? *A.*—I did not.

Q.—That was not passed over to you at all? *A.*—No; it was not.

(The cross examination next covered the hospital connections of various members of the Committee.)

Q.—Did you know Dr. Selders personally? *A.*—Never saw him but one time, and that was one evening at Columbia Hospital that he had a case of labor. I didn't see him to speak with. I went up the hall and asked one of the nurses who that man was, and she said that was Dr. Selders. That is the only time I ever saw him.

Q.—You did not talk with him? *A.*—No, I did not. I was going in the other direction at that time.

Q.—Did you permit him to come before your committee? *A.*—We didn't invite him to, and I am sure he didn't make a request to.

(There was then some discussion of rumors concerning the case of Miss Tew.)

Q.—Were you an active member of the District Medical Society in the latter half of 1937? *A.*—I went out of office. I was chairman of the Hospital Committee for one or two years; I don't know when it was. Dr. Warfield succeeded me, if you have that record. And I hate to say it, but I think I have been there three times since. There is always something that interferes.

Q.—Do you remember the dates on which you attended meetings of the District Medical Society?

THE COURT:—I think this goes far beyond the direct examination. The cross examinations are quite long because they go beyond the scope of the direct examination.

Mr. Lewin:—Don't you think, your Honor, that a question of this kind bears on the interest of the witness?

THE COURT:—I think membership has been shown. You have shown that he was a member of the society. That may or may not influence him. It is in evidence that he was a member.

Mr. Lewin:—It would be interesting to me to know what meetings he attended in the fall of 1937 when Group Health was being discussed.

THE COURT:—I will not permit any such detailed cross examination as that. I will permit you to ask him whether he was concerned with any matter with reference to G. H. A. that dealt with Dr. Selders before this.

By Mr. Lewin:

Q.—Did you have any knowledge of the controversy with regard to Group Health Association in the District of Columbia Medical Society? *A.*—I did have. Not from attending meetings. I don't think I attended meetings of the District Medical Society while that was going on.

RE-DIRECT EXAMINATION

By Mr. Leahy:

Q.—Did you not tell us also that you had some other information with reference to Dr. Selders, the subject of which occurred at Columbia Hospital, which you also took into consideration?

Mr. Lewin:—He did not tell us that here.

Mr. Leahy:—I thought he did.

A.—I remarked that my impression was that this woman was transferred from Garfield, I believe, with the diagnosis of acute appendicitis, and the gentleman who took the case over for operation found—

Mr. Lewin:—Just a minute.

A. (Continuing)—something different.

THE COURT:—I think you better not go into that.

(The remainder of the re-direct examination dealt with reports of difficulty of Dr. Selders with operative obstetrics.)

RE-CROSS EXAMINATION

By Mr. Lewin:

Q.—Doctor, is it very unusual for an expert operator in gynecology to remark when he sees an abnormality that he has not seen one of those for a long time?

Mr. Leahy:—I object.

THE COURT:—Objection sustained.

TESTIMONY OF JAMES F. MITCHELL

DIRECT EXAMINATION

By Mr. Leahy:

James F. Mitchell said he has been a practicing physician and surgeon in Washington since 1903. In preliminary training at Johns Hopkins hospital in 1893 he was head nurse in the operating room as a medical student. He graduated in 1897 and stayed on until 1903. He is chief surgeon at Emergency.

Q.—How long have you been chief surgeon at Emergency? *A.*—I think it was 1919 I came back from France and took over there.

Q.—How long were you in France? *A.*—I was only four or five months.

Q.—In what capacity did you serve in France? *A.*—I was chief of surgery in the Evacuation Hospital No. 32.

Q.—In what part of France? *A.*—I was near Toul, and Sabastapol Hospital, near Lemar.

Q.—Do you hold any office on any of the boards of Emergency? *A.*—I am on the board of directors; executive and surgical staffs.

Q.—Just what are the duties or functions of the executive staff at Emergency Hospital? *A.*—The executive staff has to do mostly with the finances and business affairs of the hospital.

Q.—And the board of directors functions for what purpose? *A.*—The board of directors is the board of last appeal; they regulate everything.

Q.—You have an attending staff and a courtesy staff, do you, at Emergency? *A.*—Yes.

Q.—Doctor, do you know whether there are any particular rules or regulations governing the right of applicants for privileges on the courtesy staff at Emergency? *A.*—Yes, there are.

Q.—What is that rule? *A.*—The rule as it now stands was passed in April 1936. We had been having a good deal of trouble with people who were not competent coming in to do work, and we considered it quite a while, the matter of having some regulation to restrain this sort of thing. So that in April 1936 a resolution was passed by the board of directors that any applicant for courtesy privileges would have to present his application, show that he was licensed in the District of Columbia, show that he carries a medical degree, that he is a member of the Medical Society, and must present evidence of his ability to practice in the particular field for which he applies for privileges.

Q.—Do you recall who was on the board of directors when that regulation was passed? *A.*—I think there were fifty members; I couldn't name them all. Mr. Blair was president.

Q.—Now, Doctor, you stated that in accordance with that regulation one of the requisites was that the applicant for privileges should show that he was qualified. What steps were taken by the hospital to determine the qualifications of an applicant? *A.*—The procedure was this: a man first made application. That was turned over to what we call the Courtesy Committee, consisting of three men who investigated it to the best of their ability; then they reported to the staff and the name was brought up before the full staff at a meeting and the case was discussed; each man was gone over that way. Usually it was very simple. The man applying for medicine was referred to Dr. Kaufman. He would say, "I know him. I know he is good, very capable." That settled it. He was admitted to those privileges. If it was gynecology, Dr. Darner handled it in the same way. If, however, he was not known to any of them and we weren't satisfied as to his professional ability, then we would appeal to the Academy of Surgeons and they would give us a report on him, and he would be considered again.

Q.—Now, with reference to the qualifications, the one that applicants should be a member of the local Medical Society, did you vote for that regulation as a member of the board of directors when it came before the board? *A.*—I wasn't present at that board meeting; I voted for it at a staff meeting when it was brought up to present it to the board.

Q.—I think you stated one of the reasons why the regulation was adopted: could you tell us how, in your judgment, membership in the local medical society would take care of the situation of incompetents that you found existing at that time? *A.*—A man applies for membership in the medical society. His record is looked into there also and the fact that he is a member of the medical society shows that he is reputable, and that obviates the necessity for a good deal of investigation on our part.

Q.—Now, when was it, if you can recall now, Doctor, the hospital first availed itself of the privilege of the Academy of Surgery for the purpose of making investigations into the qualifications of applicants? *A.*—I think that was in 1937.

Mr. Lewin:—I was going to object to this as not relevant in view of the evidence already in the record. May we approach the bench?

Q.—Doctor, I think you were at the point in your examination where I was asking you with reference to the hospitals availing themselves of the facilities of the Academy of Surgeons, with reference to investigations into the qualifications of applicants for surgical privileges where the applicant was not known to the staff: do you recall that? *A.*—Yes.

Q.—Why was it that the hospitals sought the facilities of the Academy of Surgery in the investigation of the qualifications of surgeons? *A.*—Because the Academy of Surgery made these investigations and thereby saved us a great deal of work.

Q.—Do you recall when it was that the hospital first began availing itself of the the facilities of the Academy of Surgeons? *A.*—I think in 1936.

Q.—Following the adoption of the rule that you have just stated requiring membership in the local medical society as one of the prerequisites to privileges, do you recall whether or not there were upon the staff of Emergency Hospital those who were not members of the local Medical Society? *A.*—You mean the courtesy staff?

Q.—Yes. *A.*—There were, probably, because originally there was no courtesy staff; we just allowed them to come in; and there were probably some very excellent men who had been coming in who were not members of the medical society, or were members of other medical societies. I don't know any

exactly; I couldn't name any to save my life, but it is quite possible there were.

Q.—But following the adoption of the rule in 1936, what was the policy of the hospitals with reference to new members who made application? *A.*—They had to be members of the medical society and present proper references as to their ability.

Q.—Do you recall whether you personally, Doctor, had anything to do with the consideration of the application of Dr. Raymond E. Selders for privileges at the hospital? *A.*—Yes.

Q.—Do you recall now for what privileges he applied? *A.*—I think general surgery and gynecology; in fact, all branches of surgery, as I remember it.

Q.—How broad are those privileges, Doctor, to practice general surgery and gynecology? *A.*—They are pretty broad; they would cover any branch of surgery.

Q.—Doctor, in your judgment what should be the qualifications of a man who is to be the sole surgeon for two thousand five hundred or three thousand persons to do general surgery and general gynecology?

Mr. Lewin:—Objected to. The issue is whether he had sufficient qualifications to get into the hospital, that is the only issue here.

THE COURT:—I think the question is as to the requirements of the hospital, and the considerations which went into the particular case and decision.

By Mr. Leahy:

Q.—What would be the considerations which would enter into the granting of privileges to an applicant for general surgery and general gynecology? *A.*—We don't grant privileges in two branches like that. A man is either a surgeon or gynecologist, an eye man or throat man. It is against our policy to let a man have more that one set of privileges.

Q.—A man who has made application to practice general surgery in the hospital: What considerations enter into the granting or refusal of that application? *A.*—We must have word from some one who knows him that he has done surgery, and good surgery, and is capable of doing surgery.

Q.—Do you recall whether Dr. Selders' application showed he was a member of the local medical society? *A.*—He was not.

Q.—Do you recall whether that matter was also discussed on the question of his application? *A.*—It was, yes.

Q.—When his application for surgical privileges was being discussed, did the fact that he was a member of the staff of G. H. A. enter into the discussion aganist him? *A.*—Not at all, sir.

Q.—Do you recall, Doctor, now, whether there was any correspondence had between your hospital and Mr. Penniman? *A.*—Yes, Mr. Blair wrote letters to him and he letters to Mr. Blair.

Q.—Have you any recollection now that you personally saw any such letters? *A.*—Yes.

Q.—I am going to show you three which have been introduced in evidence here, Government's Exhibits 370, 373, and 391. The first one, 370, is dated Nov. 15, 1937, on the letterhead of Emergency Hospital stationery, signed by Gist Blair. Would you look that over for us, please, Doctor, and see if you can identify it? *A.*—Yes, I remember this very well.

Q.—Do you recall what the letter was which was referred to in this communication, in which Mr. Blair says:

"Replying to your letter of November 8, requesting permission to admit patients who are members of Group Health Association, 'upon the request of the medical director,' and saying that Dr. Raymond E. Selders is on the staff of Group Health Association, I beg to say that Emergency Hospital has adopted, by its rules, a so-called courtesy list of physicians who are subject to the control of our staff under practically all conditions.

"This courtesy list is based upon certain fundamental requisites, laid down by our staff, and, while I have every friendly wish toward some of your objects, and feel satisfied that the executive committee and board of this hospital are in many ways sympathetic with the purposes of your organization providing medical and surgical care, and, when necessary, hospitalization in recognized hospitals of high standing, we do not feel at present that we can make any changes in our rules. This hospital, as are other hospitals in this city, is open to the reception of all patients.

"Dr. Selders or other representatives of Group Health Association must first be placed on our courtesy list before they can treat patients in this hospital. Your letter and Dr. Selders' credentials have been referred to the proper authorities."

A.—I do.

Q.—Now, Doctor, when he says that:

"Dr. Selders or other representatives of Group Health Association must first be placed on our courtesy list before they can treat patients in this hospital,"

was this rule applied any differently to the staff of Group Health Association than to any other applicant for privileges? *A.*—No, sir, that is our general rule.

Q.—This also is written to Mr. Penniman, William F., by Gist Blair, is it not? *A.*—Yes.

Mr. Leahy:—

"Dear Mr. Penniman:

"With further reference to your communications, requesting that Emergency Hospital furnish hospitalization to patients who are members of Group Health Association, Inc., I beg to advise that there can be no question about Emergency Hospital offering its services to any patient, regardless of color, race or creed, and its doors are open twenty-four hours every day throughout the year.

"However, as is consistent with every well regulated hospital, and in conformity with the rules of the American College of Surgeons, the Emergency Hospital does undertake to exercise authority and care to see that physicians, who are granted the privilege to treat patients on its premises, are qualified in every respect in their particular branch of the profession and are so recognized by the medical profession.

"In accordance with this idea, and in order to safeguard the patient, the Board of Directors, at its regular meeting, held April 17, 1936, unanimously adopted a resolution, providing that any physician who desires to treat patients in Emergency Hospital must make formal application, that his professional qualifications must be satisfactory to the professional staff, and as an index of his professional training and integrity that he must be a member in good standing of the District of Columbia Medical Society.

"The Emergency Hospital will be glad to have any physician make application for courtesy privileges, and if his qualifications meet our requirements, I feel sure that all privileges will be extended to him.

"Since Dr. Selders' application does not meet these requirements, the Board has not seen fit to grant him the privileges which he requested.

"Very truly yours,
Emergency Hospital.
Gist Blair, President."

By Mr. Leahy:

Q.—I want to ask you, Doctor, to what does it refer in this letter where it says:

"In accordance with this idea, and in order to safeguard the patient, the Board of Directors, at its regular meeting, held April 17, 1936, unanimously adopted a resolution, providing that any physician who desires to treat patients in Emergency Hospital must make formal application,"

et cetera.

Mr. Lewin:—Objected to as already covered.

Mr. Leahy:—I haven't completed my question yet.

Mr. Lewin:—I thought you had.

By Mr. Leahy:

Q.—How does the safeguarding of a patient have any relation to the resolution of April 17, 1936, adopted by your hospital?

Mr. Lewin:—That has already been covered.

Mr. Leahy:—Not by this witness. I haven't asked him about it.

THE COURT:—I thought it had, but let him answer it if there is any question about it.

The Witness:—Simply that we wanted to be sure men who had the privileges could render their patients the proper services.

Q.—Take Government's Exhibit 391, Doctor. This is another one of Feb. 3, 1938, from Gist Blair, this time directed to Mr. Kirkpatrick. *A.*—Yes, I remember this letter.

Q.—Now, was the result of this communication of Feb. 3, 1938, that you had this conference with Mr. Kirkpatrick which you stated you were present at? *A.*—Yes.

Mr. Leahy:—That letter states:

"Mr. dear Mr. Kirkpatrick:

"Your letter of February 2 has been received, and today the same was brought to the attention of the executive committee at its regular session at the hospital, and by resolution the committee authorized Dr. James F. Mitchell and myself to confer with you or any member of your board of trustees, and if you will telephone the superintendent at this hospital, and have arrangements made which will be convenient to Dr. James F. Mitchell, who is very much occupied, and myself, we will be glad to meet you.

"In your letter, relating to Dr. Raymond E. Selders, you suggest that your board of trustees meet with our board of trustees, and I would suggest that this is not practical since our board of trustees will not meet for several months, and matters of this kind are referred to our executive committee to decide what is advisable for the hospital to do under the circumstances.

"Very truly yours,
Gist Blair, President."

By Mr. Leahy:

Q.—Who attended that conference that you remember now?

Mr. Lewin:—It has all been covered. He stated Russell and Kirkpatrick, Blair and himself.

THE COURT:—Well, he may answer.

By Mr. Leahy:

Q.—Who attended that meeting? *A.*—Mr. Russell and Mr. Kirkpatrick; Mr. Blair and myself.

Q.—Do you recall what the subject matter of the conference was? *A.*—I remember very little about it, except they were urging the appointment of Dr. Selders to the courtesy staff.

Q.—On what ground? Do you now recall? *A.*—That I don't remember. Mr. Russell did most of the talking. Mr.

Blair was very sympathetic and told them again just what he told them before in his letters, and so on, that a man to do work there as a member of the courtesy staff had to fulfil certain requirements, which Dr. Selders did not do.

CROSS EXAMINATION

By Mr. Kelleher:

Q.—Dr. Mitchell, did you make the verbal communication yourself to the Washington Academy of Surgery? *A.*—No, sir.

Q.—Who did? *A.*—It was done through our secretary, Dr. Lyons.

. . . . . .

Q.—As a matter of fact whatever communication the Washington Academy made concerning the application of Dr. Selders, that was not the ground on which he was denied privileges at Emergency? *A.*—It simply showed us he was not qualified.

Q.—Please answer my question: That was not the ground on which Emergency denied him privileges, was it? *A.*—The grounds were his qualifications.

Q.—The qualifications were that he was not a member of the Medical Society? *A.*—That was part, and also that he was not surgically qualified.

Mr. Kelleher:—Exhibit 663 are the minutes of the executive staff meeting of Emergency Hospital, Dec. 21, 1937. I will read only the last paragraph. The minutes show that Dr. Mitchell was present.

"Two letters from Mr. William Penniman, President, Group Health Association, Inc., were read. These letters requested, first, that patients of the Group Health Association be admitted to Emergency Hospital upon the request of Dr. Henry Rolf Brown, director, and, second, that Dr. Raymond E. Selders, surgeon, be permitted to attend these patients while hospitalized. The staff recommended that Mr. Penniman be informed that patients of the Group Health Association would be admitted to Emergency Hospital upon the request of Dr. Henry Rolf Brown, director, and that he be further informed of the regulation adopted by the board of directors on April 17, 1936, requiring that all physicians placed on the courtesy list must be members of the District Medical Society, and that since Dr. Selders is not a member of the District Medical Society, he could not be placed on the Courtesy List of the hospital."

By Mr. Kelleher:

Q.—Now, Dr. Mitchell, is it not true that this was the first meeting of the executive staff at which Dr. Selders' application was considered? *A.*—I really couldn't say.

Q.—Was there any discussion at this meeting of December 21 other than the facts as shown in the minutes? *A.*—I shouldn't think so; I didn't read them carefully.

Q.—And there isn't anything in the minutes to show that the recommendation of the Washington Academy of Surgery was considered? *A.*—Nothing there that I see. That was certainly not the only decision on Dr. Selders.

Q.—Isn't that the decision of the executive staff? *A.*—I imagine so, yes.

Q.—That decision was based on the fact that he did not have membership in the local medical society? *A.*—It was not by us, as I remember. That may have been sent to the society, but we always, in considering any man, consider his qualifications.

Q.—But, as a matter of fact, when Mr. Penniman was notified by Major Blair on Dec. 30, 1937, the ground stated was that he was not a member of the local society? *A.*—Does Blair say that in his letter?

Q.—Will you look at exhibit 373?

THE COURT:—That was read just a short while ago. That is what the letter stated. It does not do any good to ask the doctor about it. The letter itself shows what it says.

By Mr. Kelleher:

Q.—As a matter of fact, then, Dr. Selders was denied privileges because he was not a member of the local medical society? *A.*—One reason, yes, sir.

Q.—And the only reason given in the minutes and in the letter to him? *A.*—That may be.

Q.—You knew, did you not, that Dr. Selders was a member of the Harris County Medical Society and of the American Medical Association? *A.*—I saw that in his application, yes.

Q.—Will you identify this as the minutes of the meeting of Oct. 14, 1937, of the executive staff? It is a photostatic copy. Can you identify this as the minutes of that meeting? *A.*—Yes.

Mr. Kelleher:—U. S. exhibit 664 is a photostatic copy of the minutes of the regular meeting of the executive staff of Emergency Hospital, held on Oct. 14, 1937. From these minutes I read the following:

"Attention of the staff was called to the matter that occasionally an applicant for courtesy privilege will be a member of his local medical society, but not of the District Medical Society. It was ruled that ordinarily this would meet the requirement of the hospital that a man be a member of the District Medical Society."

By Mr. Kelleher:

Q.—Dr. Mitchell, as a matter of fact, with respect to Dr. Selders' application, this interpretation adopted on Oct. 14, 1937 was not applied, was it? *A.*—I beg your pardon; of the local medical society?

Q.—The interpretation put on that regulation of Emergency at the meeting of Oct. 14, 1937, that membership in another local medical society of the A. M. A. would ordinarily be sufficient. *A.*—Isn't it in his own local medical society, or is it another one?

Q.—"It was ruled that ordinarily this would meet the requirement of the hospital that a man be a member of the District Medical Society." *A.*—That is local.

Q.—Wasn't Dr. Selders a member of the Harris County Medical Society? *A.*—No, he was practicing in Washington.

Q.—Wasn't that his local medical society? *A.*—It had been; it wasn't then.

Q.—As a matter of fact, Emergency Hospital did not require that all applicants be members of the Medical Society of the District of Columbia? *A.*—Yes, of the local society of the district in which he was practicing at the time. We have men in Virginia, for instance, who are members there.

Q.—Finish your answer. *A.*—We have men in Virginia—neighboring Virginia—and neighboring Maryland who do not belong to the District Society but do belong to the local societies in the districts in which they are practicing.

Q.—Do you permit them to practice in Emergency Hospital? *A.*—We let them come to Emergency Hospital.

Q.—Isn't it also true that as late as June of 1938 there were members of the staff of Emergency Hospital who were not members of the local medical societies? *A.*—Not on the staff; they may have been courtesy; but I don't know, as I explained before.

TESTIMONY OF DR. A. MAGRUDER MacDONALD

DIRECT EXAMINATION

By Mr. Leahy:

A. Magruder MacDonald said he is a practicing physician in the District of Columbia. He graduated in 1915 from Georgetown University. He was at the Emergency Hospital as an intern and resident physician there for a period of two years. Subsequently he was superintendent of Casualty Hospital for a year. Subsequently he went into the service and was abroad, first with the British army and then with the American army, and returned to the States. He remained in the service at Camp Lee, was then discharged from the service, and then entered into the practice of medicine. He was appointed coroner in 1934. Prior to that time he had been deputy coroner, and prior to that, in the period from about 1920, he had been doing autopsies and postmortems for the District government in the coroner's office. He is on the council of Sibley Hospital, and on the staff at Casualty Hospital, and has privileges of treating patients in other hospitals in the city. His appointment on the council of Sibley was done at an interim; it was not done at the usual time of appointment of the staff of council. His recollection is that it was in March of 1937. At Casualty, he is classed as an associate in surgery. In 1937 he was on the intern committee, and in 1938 was on the credentials committee.

Q.—When you speak of the credentials committee, will you kindly tell us what the functions of that committee are or were in 1938, when you were a member of it? *A.*—My understanding of the functions of the credentials committee was to review the credentials of any individual who had been referred to it by the staff for their determination and recommendation to the staff.

Q.—Recommendation for what purpose? *A.*—For admission with the privileges of treating patients in that institution.

Q.—Do you recall when you first became connected with Casualty Hospital, Doctor? *A.*—I think it was in February of 1917.

By Mr. Leahy:

Q.—Doctor, do you recall whether or not while you were on the credentials committee at Casualty the application of a Dr. Raymond E. Selders came before your committee for investigation and report? *A.*—It did.

Q.—Have you any independent recollection of about when that application came before your committee? *A.*—Yes, it was in June, I believe, 1938.

Q.—Did you personally know Dr. Raymond E. Selders? *A.*—I did not. To my recollection, I have never seen the gentleman. If I have seen him, I didn't know who he was.

Q.—Do you recall now having made an investigation into or an examination of the qualifications of Dr. Selders? *A.*—The investigation that I made consisted of this: that certain letters and statements were presented to me for my consideration.

Q.—Did you pass on those letters in considering the qualifications? *A.*—I did.

Q.—Did you make your recommendation as to what those qualifications indicated? *A.*—I did.

Q.—Did you recommend for or against the granting of courtesy privileges to Dr. Selders at Casualty? *A.*—I recommended against.

Q.—On what was that recommendation based?

Mr. Lewin:—The recommendation is in evidence, in writing.

Mr. Leahy:—I think I may ask him on what he based his writing.

THE COURT:—The recommendation itself may be there, but he may ask him on what it was based.

Mr. Lewin:—I think the witness testified that he considered only certain letters that were laid before him. Now, they must have passed on those letters, and if those letters are in existence we ought to have them.

THE COURT:—It may have been based on his conclusions. If so, would he not have a right to state his conclusions?

Mr. Lewin:—I think they are in the written report.

THE COURT:—There is no objection to his stating the conclusions on which the recommendation was based. Suppose they had been stated in the letter; wouldn't they be evidence?

Mr. Lewin:—Yes.

THE COURT:—It may be that the letters should be produced if they are available. I am not passing on that.

Mr. Leahy:—Will you read the question, please?

The Reporter:

"Question. On what was that recommendation based?"

The Witness:—On my interpretation of these letters.

Mr. Leahy:—Do you have handy those letters that are in evidence?

Mr. Lewin:—We have copies of them.

By Mr. Leahy:

Q.—I am now going to show you copies of letters, Doctor, and ask you whether you can identify them as letters which you had before you. I cannot give you exhibit numbers, but I can give dates. One of them is dated April 25, 1938 and is from the Worcester City Hospital, Worcester, Mass. The other is from Dr. J. C. Alexander of Houston, Texas, and is dated April 28, 1938. *A.*—Yes, sir. These letters were the ones that I saw at that time.

Q.—Were there any other letters than those two which I have shown you which you now recall that you had before you? *A.*—My recollection is that there was another one. There were three.

Q.—Can you recall now from what other source that letter came? *A.*—The University of Pennsylvania. I think that is the letter.

Mr. Leahy:—While they are getting this letter dated April 27, I will read the letter dated April 25, 1938, from the Worcester City Hospital, over the signature of George A. MacIver, addressed to Miss E. M. Rogers, Superintendent of Casualty Hospital:

"Dear Miss Rogers:

"Dr. Raymond E. Selders served as surgical resident in this hospital for one year ending June 30, 1937, coming to us highly recommended from the Post-Graduate School of the University of Pennsylvania.

"He participated in the surgical work of the hospital considerably and had an opportunity to gain considerable competence. Our operating schedules show that two hundred and three cases were assigned to him for operation. This does not mean, however, that he actually performed these operations. He may have elected to assist in some of them. There is record that he actually performed and dictated one hundred and thirty-three operations, one hundred and five of which were classified as major. From the above I think you can conclude that his surgical training is such as to give him competence.

"Yours very truly,
"George A. MacIver,
"Superintendent."

This is the letter of April 28, 1938, from Dr. J. C. Alexander, in the Shell Building, at Houston, Texas:

"Dear Mr. Rogers:

"In reply to your letter regarding the qualifications of Dr. Raymond E. Selders, I beg to advise that his professional qualifications in surgery are well above the average and ethically and morally he has always been above reproach. During his several years of practice here he made many valuable lay and professional friends.

"He is now a member of the Harris County Medical Society here.

"Yours truly,
"J. C. Alexander."

By Mr. Leahy:

Q.—Doctor, here is the third letter which you mentioned. I will bring it to your attention. It is dated April 27, 1938 and is from the University of Pennsylvania. I will ask you if that is the letter to which you just referred. *A.*—Yes, sir.

Mr. Leahy:—That letter is a copy of an original on the letterhead of the University of Pennsylvania Graduate School of Medicine. It is addressed to the superintendent of Casualty Hospital.

"Dear Mr. Rogers:

"Dr. Raymond E. Selders was a student in the surgical group of the Graduate School of the University of Pennsylvania during 1935-1936, and he completed this basic year satisfactorily. He then went to Worcester, Mass., and spent a year in clinical training, and I understand that his work there was satisfactory to his preceptor.

"Personally, I know nothing about his ability as a surgeon beyond this basic training which he had in Philadelphia, and I am sure you have a full account of his training before he came here. This training, according to his records, was broad, and he is a man of mature age and general experience.

"Very truly yours,
"Walter Estell Lee."

By Mr. Leahy:

Q.—Doctor, as a member of the credentials committee of the Casualty Hospital, do you recall whether you had any other information with reference to the qualifications of Dr. Selders than what is set forth in these three letters, copies of which I have just brought to your attention? *A.*—I believe that during the discussion Dr. Caylor, who was on that committee, and who was connected with Providence Hospital, stated that the matter had also been referred by them to the Washington Academy of Surgery and that they had obtained an adverse report.

Q.—Doctor, what have you to say with reference to the sufficiency of the qualifications for one applying for general surgical privileges, as disclosed in those letters? *A.*—Well, from my observation, that a surgical resident usually performs those operations—

Mr. Lewin (interposing):—That is objected to. I do not think we ought to have testimony about general surgical residents.

THE COURT:—The question is what considerations entered into his findings with reference to this matter. He may state that.

The Witness:—I believe, your Honor, that was my intention, to state why: that in my observation the surgical residents perform these operations under supervision of the staff, and certain cases are allotted to them by the staff to perform. In other words, in my opinion, that action is not always independent. Now, it may have been in this particular case; I don't know; but I was going by a general rule, and it was my opinion that if that were true, this man should have had more actual contact with patients and responsibility before he went out into general surgery; that he should still serve an apprenticeship with some other surgeon for a period of time.

By Mr. Leahy:

Q.—Do you recall now, Doctor, whether you had any knowledge as to Dr. Selders' qualifications coming to you from anything which was done at Casualty Hospital? *A.*—I am not positive about anything of that nature.

Q.—Did you also serve in any capacity whatsoever in Sibley Hospital in passing on the qualifications of Dr. Selders? *A.*—I did.

Q.—By virtue of what office which you held in the hospital was it that you aided or assisted in the investigation into the qualifications of Dr. Selders? *A.*—As a member of the council. I was assigned to three committees and still am assigned to those three committees: the committee on surgery, the committee on x-ray, and the committee on laboratory. The method at Sibley Hospital consists of this: When an individual applies for courtesy privileges at the hospital, a form is sent to us, which is a notice that so and so has applied for courtesy privileges of major surgery and minor surgery—that is what is checked on my particular blank—and that full information is in the office. I received that in November of 1937, and my notation on that was this: "Not approved. Need more information"; because there was nothing there—no letters or no information—except this application of this individual, and I knew of nobody whom I could inquire from who had seen this man perform any operations.

Q.—Did you know of any source to which you could go in order to obtain information about Dr. Selders or his qualifications? *A.*—Well, as I say, that was not my particular duty. In referring back to the hospital, "more information" or "need

more," or something—that is the apparent reason that I gave. I mean by "apparent," I can't recall the exact words, but I wanted more information. Then the hospital's duty is to supply me and each individual of that committee with more information.

Q.—Do you recall whether or not any more information was ever supplied to you, Doctor, through Sibley Hospital? *A.*—The case, to my recollection, was never referred back to me after I had put in this original paper.

Q.—Doctor, in passing on the qualifications of Dr. Selders, and in coming to the conclusions which you reached at Casualty Hospital, what relation had those conclusions which you formed to G. H. A.? *A.*—I might state this: that I believe that I came out and said this: that in view of certain controversies that had existed over a period of months, those things should be discarded from our minds and that we should consider this applicant from the information at hand.

Q.—Who finally passes on the application? *A.*—First the staff and then the board of directors.

By Mr. Leahy:

Q.—In coming to your conclusions at Sibley, where you noted "further information required," or words in substance to that effect, what relation did your concluding that you needed further information bear to G. H. A.? *A.*—Well, I didn't know very much about G. H. A. at that time. I believe it was just being organized in November. I personally did not know the real function of the organization.

Q.—Did G. H. A. enter into your conclusions, as far as Sibley was concerned? *A.*—It was noted on this notice that was sent to me that this individual was an employee of G. H. A.; but having no information or recommendation, that did not enter into my mind at that particular time, because I wanted the information so that I could pass on him in justice to the man and to myself.

CROSS EXAMINATION

By Mr. Lewin:

Q.—Dr. MacDonald, there is in evidence, I believe, a letter from President Taylor, of Sibley, to Dr. Selders, dated Feb. 24, 1938, to the effect that his application had been again submitted to the executive committee of the medical council for reconsideration of their action in refusing same.

"I regret to inform you that the committee did not reverse its action, and your request has been refused."

Were you a member of that executive committee? *A.*—No, sir. No; I can explain that.

Q.—So, these references at Sibley, which were before the executive committee on the reconsideration, were not referred to you? *A.*—Not to me, no, sir.

Q.—Were they available to you, Doctor? *A.*—Yes. I think they could have been available to me if I had inquired about it, but they were not, because the executive committee is a separate committee, and I was only a subcommittee member. Can I explain that a little further?

Q.—Yes, indeed. *A.*—The chairman of each committee is a member of the executive committee, and I was only a submember of a particular committee; therefore, the executive committee action would not be known to me, because they have their meetings, and this other memorandum is sent out individually, which we carry into the hospital.

Q.—At the time you made your recommendation at Sibley, Dr. Selders' references had not responded; isn't that true? *A.*—Well, I would say that they weren't there.

Q.—I show you what purports to be a photostatic copy of the reference to you and your report. *A.*—That is my signature. "Not approved. Further information required."

Q.—That is dated Nov. 27, 1937? *A.*—That is right.

Q.—It says:

"Applicant's credentials on file in the office of the President.

"Attention of the committee is called to the fact that above applicant is one of the salaried physicians of the Home Owners' Loan Corporation Group Health Association and that information as to his qualifications and correspondence in connection with his application will be found on file in the president's office available to members of the various committees concerned for their information."

A.—Yes.

Q.—When you went to the office to do that, you found letters had been written but that the references had not responded? *A.*—I won't say that; I don't know when the letters went out. All that I can state is this that in the folder was the application and no other correspondence. I don't know where that other correspondence, if it existed, was kept; but in the folder was only the man's application and no letters.

Q.—As a matter of fact, you never saw the responses from his references at Sibley? *A.*—I did not.

TESTIMONY OF DR. JAMES A. CAHILL

DIRECT EXAMINATION

By Mr. Leahy:

James A. Cahill of Washington, a practicing surgeon, graduated from Georgetown University in 1915. Following graduation he was in St. Elizabeths Hospital, at Youngstown, Ohio; Providence Hospital, Washington, D. C.; Georgetown University Hospital, in Washington; and in the Army for two years. He is a Fellow of the American College of Surgeons, also the Washington Academy of Surgery. He is chief surgeon at the Georgetown University Hospital, chief surgeon at Providence Hospital, consulting surgeon at Gallinger Hospital, consulting surgeon at Columbia Hospital, and professor of surgery at Georgetown University School of Medicine.

Q.—Do you recall, Doctor, that in the year 1937 there came a time when you wished to establish a residency in surgery in both Georgetown and Providence Hospitals? *A.*—I do.

Q.—Have you an independent recollection, so that we will not have to take the time to get the documents out to show you, of the fact of writing to any one in connection with that matter? *A.*—Yes, I have.

Q.—To whom did you direct your correspondence? *A.*—I wrote a letter to Dr. William Cutter, in Chicago. He is the head of the Council on Medical Education of the American Medical Association. I wrote to him requesting an inspector.

Q.—Did you request Dr. Cutter to do anything with respect to your establishing these residencies? *A.*—Yes, I did. I asked Dr. Cutter to inspect both the Georgetown University Hospital and the Providence Hospital with reference to approving the residency in surgery at both of those institutions.

Q.—Doctor, at the time you made this request for approval of both Providence and Georgetown hospitals, did your request have any connection whatsoever with G. H. A.? *A.*—I never heard of G. H. A. at that time. This request came along in January, as I recall, of 1937.

Q.—Did there finally come a time when such an inspection was made of the hospitals? *A.*—Yes, there was.

Q.—Did you personally come in contact with anybody who made this inspection? *A.*—I came in contact with Dr. Peterson, who was sent by Dr. Cutter.

Q.—Do you know whether Dr. Peterson investigated or made an inspection of both Providence and Georgetown hospitals? *A.*—He did.

Q.—Did you at that time discuss the matters with Dr. Peterson? *A.*—I did.

Q.—I will put the question directly to you, Doctor: Did any of your discussions relate to anything at all about G. H. A.? *A.*—None whatsoever.

Q.—Do you know about the Mundt Resolution, so called? *A.*—I don't know the Mundt Resolution as such; I couldn't recite it; but I have heard of such a resolution.

Q.—Do you recall now whether there came a time when Dr. Peterson made a report of what he found on the inspection of those two hospitals? *A.*—Yes, there did come a time.

Q.—Do you recall whether that report came under your official attention and for your official consideration? *A.*—It came under my consideration.

Q.—Without going into details about the report with respect to either or both of the hospitals, Doctor, do you recall whether any suggestion was contained in a letter transmitting the report with reference to members of the staffs of local hospitals being members of the local medical society? *A.*—Yes, in that letter there was a suggestion made that the members of the staff at the Providence and Georgetown Hospitals should become or were asked to become members of the local society—the Medical Society.

Q.—You, I take it, are also on the staffs at both Providence and Georgetown? *A.*—I am.

Q.—Which staff were you on in either or both of the hospitals? *A.*—Surgical.

Q.—Do you recall whether the report which we have just referred to came under the attention of the staffs—the surgical staffs—of both those hospitals? *A.*—The report came under the consideration of the surgical staff and also the general staff.

Q.—Are you on the general staffs of both hospitals? *A.*—Yes, I am; the executive staff.

Q.—So, the question about this request or suggestion that the members of the staffs should become members of the local Medical Society came before the staffs for discussion? *A.*—That is right.

Q.—I will ask you, Doctor, if you considered that there was any threat contained in the resolution which was set forth in the letter transmitting these reports, that approval would not be accorded you unless all the members of the staffs became members of the local society.

Mr. Lewin:—I object to that. The letters speak for themselves.

Mr. Leahy:—The letters definitely speak for themselves; it is the interpretation which we want to show, if your Honor please.

Mr. Lewin:—He did not write the letters.

THE COURT:—I think he may state whether or not they regarded that as a requirement.

The Witness:—There was absolutely no threat, there was no coercion, there was no duress—

Mr. Lewin:—That is objected to. That is not answering the question.

The Witness:—I am making my answer emphatic; I beg your pardon, sir.

Mr. Lewin:—I move that it be stricken out.

Mr. Leahy:—No.

Mr. Lewin:—That is outside the scope of your Honor's ruling.

THE COURT:—I think it comes within the scope. Perhaps it is a little broad, but the question is whether they acted under the feeling that they were required to do it; whether there was any element of coercion, so far as they were concerned; whether they acted freely, without any such feeling. I think that is appropriate.

Mr. Lewin:—But do you not think it ought to be confined to how this doctor acted?

THE COURT:—Unless there was a discussion in the meeting which expressed the views of other members. I think then he may state it.

By Mr. Leahy:

Q.—Doctor, were you present at the staff meetings when this suggestion was discussed, if it was discussed at the staff meetings? *A.*—Yes, I was.

Q.—I will ask you whether or not the staff of each hospital finally voted on the suggestion.

Mr. Lewin:—Just a minute, Doctor. I think the minutes would show what happened in the staff meetings, your Honor.

Mr. Leahy:—Well, they do; that is true.

Mr. Richardson:—What is the difference?

Mr. Lewin:—Can you show any minute which shows that?

Mr. Richardson:—There is no best-evidence rule with respect to minutes, and you know it.

THE COURT:—I think the best evidence rule as to such matters applies only when you are attempting to impress some obligation of liability on a corporation; but for general purposes, whoever was there and would have heard what went on is a proper witness. There is a distinction in the best-evidence rule, but it is rather narrow. If the hospital were being sued with respect to some such action, then, of course, the best-evidence rule would be applied with regard to the obligation of the hospital.

Mr. Lewin:—May we have fixed the time of this meeting, so that we may have some access to the minutes?

MARCH 27—AFTER RECESS

TESTIMONY OF DR. JAMES A. CAHILL

DIRECT EXAMINATION (RESUMED)

By Mr. Leahy:

Q.—Doctor, just before luncheon I think I was asking you whether or not the recommendation which was contained in the letter which accompanied the report to Providence Hospital was considered by the staff at Providence Hospital? *A.*—Yes, sir; it was.

Q.—Were you present at the time it was considered? *A.*—Yes; I was.

Q.—What was the consideration given to the recommendation of the American Medical Association in the letter which accompanied the report on the inspection of the hospital? *A.*—That they were willing to cooperate in helping to make the hospital better.

Q.—What if any consideration was given to it as a threat that unless cooperation were given the approval of the residency would not be granted?

Mr. Lewin:—Objected to. It has been covered. He said the hospital was willing to cooperate.

THE COURT:—Objection overruled.

A.—There was no threat.

By Mr. Leahy:

Q.—Do you recall whether, as a result of the inspection which was made of Georgetown Hospital on its application for a residency in surgery there, that letter which accompanied the report was likewise considered by any members of the staff of Georgetown Hospital? *A.*—It was considered by the staff.

Q.—Were you present at the staff meeting at which that was considered? *A.*—Yes; I was.

Q.—What consideration was given to that recommendation? *A.*—The same consideration—they were willing to cooperate.

Q.—Did the staff consider that there was any threat contained in the letter which accompanied the report? *A.*—There was no threat.

Q.—Subsequently, Doctor, was Providence Hospital approved for the residency in surgery? *A.*—The Georgetown University Hospital was approved first. Providence Hospital was asked to make certain changes for the betterment of that institution, and then it was approved.

Q.—And then it was approved? *A.*—Yes; it was.

Q.—Do you recall when it was that Georgetown was approved, Doctor? *A.*—I couldn't say exactly; I don't recall the date, but I know that Dr. Peterson—it was after the first inspection, and then an inspector came later to inspect Providence, and after that inspection they were approved.

Q.—Do you recall, Doctor, whether at Georgetown a rule was adopted in substance to the effect that members of the courtesy staff should be members of the local medical society also? *A.*—There was a rule passed asking them to become members of the District Medical Society.

Q.—Do you recall whether there was a rule adopted at Providence? *A.*—They had the same rule adopted there.

Q.—Do you recall, as a matter of fact, whether all members of the courtesy staff of Providence Hospital are members of the local District Society? *A.*—No; they are not. I mean, there are members on the staff now and were members of the staff then, at the time of the inspection, that were not members of the District Medical Society or the American Medical Association.

Q.—Is that true with reference to Georgetown Hospital? *A.*—It is true.

Q.—Doctor, we have had some evidence here with reference to questionnaires which were sent out by the Hospital Committee of the District Medical Society. Do you recall whether or not at any time any questionnaire was received by Providence and considered by the staff of Providence? *A.*—I never saw a questionnaire at Providence.

Q.—Did you ever see a questionnaire at Georgetown? *A.*—I never did.

Q.—Do you recall, Doctor, now, whether at any time the so-called Mundt Resolution has even been used against anybody on the staff of either Providence or Georgetown? *A.*—No; it has never been used.

Q.—In the adoption of the so-called Mundt Resolution, either at Georgetown or at Providence, did it have any connection whatsoever in its adoption in the board meetings which you have told us about, with G. H. A. or any members of the staff of G. H. A.? *A.*—Not at all.

Q.—Do you recall whether or not in the discussions with reference to the adoption of a regulation that membership in the local medical society should be asked of those on the courtesy staffs, what it was which induced the members of the board to adopt such a resolution?

Mr. Lewin:—What resolution is that?

Mr. Leahy:—That they should be members of the local medical society.

A.—It was believed that the members of the local medical society should be members in the practice of medicine who were interested in advancing the betterment of the hospital so that patients could be treated better and so that advancements in science could be recognized when they were brought out.

CROSS EXAMINATION

By Mr. Lewin:

Q.—Dr. Cahill, do I understand that sometime after the receipt of Dr. Cutter's letter the Georgetown Hospital for the first time required membership in the District Medical Society for its courtesy staff? *A.*—After Dr. Cutter's letter; yes.

Q.—Is the same thing true with regard to Providence Hospital? *A.*—The same thing would be true regarding Providence. They asked their cooperation.

Q.—And then for the first time you put that rule into effect with regard to Providence? *A.*—I think that is true.

. . . . . .

(To be continued)

OFFICIAL NOTES

RADIO BROADCASTS

The next three programs to be broadcast in the series "Doctors At Work" are as follows:

May 7. So Mothers May Live.
May 14. Physician to the Community.
May 21. The Doctor in Arts and Letters.

The program is scheduled over the Blue Network of the National Broadcasting Company Wednesday at 10:30 p. m. eastern daylight saving (9:30 eastern standard) time (9:30 Chicago daylight saving, 8:30 central standard, 7:30 mountain standard, 6:30 Pacific standard time).

ADDRESSES BY OFFICIAL STAFF

DR. PAUL C. BARTON:

May 12—Dane County Medical Auxiliary, Madison, Wis.
May 14—George Williams College, Chicago.
May 20—LaVerne T. Perrottet Post, American Legion, Wheaton, Ill.

DR. W. W. BAUER:

May 3- 5—National Education Association Yearbook Commission, Philadelphia.
May 6—High School Assembly, Greensburg, Pa.
May 6—Rotary Club, Greensburg, Pa.
May 6—Westmoreland County Medical Society, Women's Auxiliary and Hospital Auxiliary, Greensburg, Pa.
May 8—Cudahy Health Department, public meeting, Cudahy, Wis.
May 12—Indiana University Convocation, Bloomington.
May 19—Hampden County Tuberculosis and Health Association, Springfield, Mass.
May 20—National Congress of Parents and Teachers, Panel, Boston.
May 21—National Congress of Parents and Teachers, Panel, Boston.
May 23—Wisconsin Alumni Association, Madison, Wis.
June 3—Joint Committee of the National Education Association and the American Medical Association Symposium, Cleveland.
June 4—American Medical Association, Woman's Auxiliary, Cleveland.

DR. MORRIS FISHBEIN:

May 5—Executives Club, Asheville, N. C.
May 6—Executives Club, Columbia, S. C.
May 7—Executives Club, Augusta, Ga.
May 8—Executives Club, Montgomery, Ala.
May 9—Executives Club, Mobile, Ala.
May 10—Julius Friedlaender Fund, Columbus, Ga.
May 12—West Virginia Medical Association, Charleston.
May 13—Woman's Auxiliary West Virginia Medical Association, Charleston.
May 13—Executives Club, Bluefield, W. Va.
May 19—North Dakota Medical Association, Grand Forks.
May 22—Executives Club, Nashville, Tenn.
May 22—Radio Address WSM, Nashville (5 to 5:15 p. m.).

DR. FRANK H. LAHEY:

May 1—Edwin A. Jarecki, Memorial Lecture, Jewish Hospital, Philadelphia.
May 7—Essex North District Medical Society, Centennial Meeting, Lawrence, Mass.
May 13—American Association for the Study of Goitre, Boston.
May 14—New Hampshire Medical Society, 150th Anniversary, Manchester, N. H.
May 15—National Gastroenterological Association, New York.
May 20—Society of State of North Carolina, Pinehurst, N. C.
May 21—Massachusetts Medical Society, Boston.
May 28—Rhode Island Medical Society, Newport, R. I.

DR. PAUL A. TESCHNER:

May 8—Fairoaks Presbyterian Church, Oak Park, Ill.
May 12-15—Texas State Medical Association, Fort Worth.

DR. NATHAN B. VAN ETTEN:

May 10—Polyclinic Medical Society, New York.
May 15—Iowa State Medical Society, Davenport, Iowa.
May 21—Massachusetts Medical Society, Boston.
May 25—American Jewish Physicians Committee, New York.
May 28—National Board of Fire Underwriters, New York.

EXHIBITS FROM HEADQUARTERS

May 1 —School Health Review, Joliet, Ill.:
Human Factory.
Your Personal Health.

May 3-5 —Wayne County Chiropody Society, Detroit:
Posture.

May 5-8 —California Medical Association, Del Monte (annual meeting):
Dangers of Self Diagnosis and Self Medication.
"Patent Medicine" Testimonials.
Silicosis and Pneumoconiosis.

May 5-8 —Nebraska State Medical Association, Lincoln (annual meeting):
Syphilis.

May 7-12 —New Haven Hospital, New Haven, Conn.:
Respiratory System in Health and Disease.
Food Fads.

May 9-12 —Iowa State College of Agriculture, Ames:
Pathology of Tularemia.
Spread and Control of Tularemia.

May 10-18—Phillips-Exeter Academy, Exeter, N. H.:
Human Factory.

May 12-14—West Virginia State Medical Association, Charleston (annual meeting):
Human Factory.
Heroes of Medicine.
Information About Syphilis.
Heart Disease.
Prevention of Burns.
Medical Discoveries.

May 12-15—Kansas Medical Society, Topeka (annual meeting):
Cutaneous Granulomas.
Cutaneous Manifestations of Syphilis.
Hygeia Exhibit.

May 12-15—Texas State Medical Association, Fort Worth (annual meeting):
Use and Abuse of Barbiturates.

May 12 —Parkland Hospital, Dallas, Texas:
Your Health.

May 12 —Sedgwick County Medical Auxiliary, Wichita, Kan.:
Information About Health.

May 13-16—Georgia Medical Association, Macon (annual meeting):
Hospital Exhibit.

May 15-20—Tehama County Fair, Red Bluff, Calif.:
Dangers of Self Diagnosis.
"Patent Medicine" Testimonials.

May 15-30—Cleveland Health Museum, Cleveland:
Periodic Health Examinations.
Dangers of Self Diagnosis.
Your Personal Health.
The Public Health.
Your Bones and Muscles.

May 19-21—North Dakota State Medical Association, Grand Forks (annual meeting):
Spread and Control of Tularemia.
Anesthesia.

May 20-22—Illinois State Medical Society, Chicago (annual meeting):
Mechanical Nostrums.
Use and Abuse of Barbiturates.
Cutaneous Manifestations of Tuberculosis.
Hygeia Exhibit.

May 22-24—Minnesota State Hospital Association, St. Paul (annual meeting):
Prevention of Eye Injuries.
Prevention of Accidents.

May 26-28—Minnesota State Medical Association, St. Paul (annual meeting):
Physical Therapy.
Prevention of Eye Injuries.
Prevention of Accidents.

THE CLEVELAND SESSION

Symposium on Health Problems in Education

The Symposium on Health Problems in Education, under the sponsorship of the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association, together with the Section on Ophthalmology, the Section on Laryngology, Otology and Rhinology, the Section on Pediatrics and the Section on Preventive and Industrial Medicine and Public Health of the American Medical Association, will be held in the Ball Room, Fourth Floor, Cleveland Public Auditorium, at 2 p. m., Tuesday, June 3.

MEDICAL LEGISLATION

STATE MEDICAL LEGISLATION

Florida

Bills Introduced.—H. 156 proposes to enact a separate massage and physiotherapy practice act and to create an independent board of massage and physiotherapy examiners to examine and license applicants for licenses to practice massage and physiotherapy. While the bill proposes to permit such licentiates to utilize numerous agencies of physiotherapy, it does not permit "methods or instruments for diagnostic purposes, nor permit the use of the x-ray." H. 245 proposes to establish at Avon Park, in Highlands County, an additional state institution for the curable cases of mentally deranged persons. H. 256 proposes to appropriate $10,000 annually to the state board of health for distribution of insulin to persons suffering from diabetes or kindred diseases and who are financially unable to purchase the drug. H. 274 proposes to require "all doctors and midwives . . . to use an effective solution of silver-nitrate in the eyes of every new born baby." H. 283 proposes to require each party to a proposed marriage, as a condition precedent to obtaining a license to marry, to present a certificate from a licensed physician (1) that within twenty days next prior to the application for a license to marry he has examined the party as to the existence or nonexistence in such person for venereal diseases and (2) as to whether or not the party is suffering from any communicable venereal disease, as nearly as may be determined by a thorough examination and by the application of recognized clinical laboratory tests of scientific research. H. 294 proposes to require every expectant mother at least six months prior to the expected date of birth of the child to submit to a physical examination by a licensed physician to determine whether or not the mother has any disease that may be communicated or transmitted to the offspring. A physician making such physical examination is to furnish any treatment that may be indicated. If, however, the expectant mother is an indigent person, the physician is to certify the fact to the state board of health, which is to arrange immediately for necessary treatment. Any midwife who may be called into attendance on any expectant mother must call into attendance a duly licensed physician, if the examination referred to has not as yet been made. H. 472 proposes to require the annual examination of domestic servants to determine the presence of contagious, infectious or communicable disease.

Illinois

Bills Introduced.—S. 412 proposes a procedure whereby the state may reimburse nonprofit hospitals caring for indigent persons injured in motor vehicle accidents. S. 411 proposes that any surplus remaining in the state treasury after the principal and interest on road bonds have been paid from the receipts of motor registration fees shall be used to finance the reimbursement to nonprofit hospitals called for in S. 412. S. 417, to amend the Uniform Narcotic Drug Act, proposes so to define narcotic drugs as to include barbital, as defined in the bill.

New Jersey

Bills Introduced.—A. 402 proposes to prohibit any person other than a licensed physician from treating or prescribing for a case of venereal disease and any person, other than a licensed pharmacist, from dispensing or selling a drug, medicine or remedy for the treatment of such a disease. The bill further proposes that such medicine or remedy shall be supplied only on the prescription of a duly licensed physician. Nothing in the bill, however, is to prevent a physician, if he deems it advisable, from dispensing any drug, medicine or remedy for the treatment of a venereal disease under his immediate supervision. A. 408 proposes to penalize any person, firm, corporation or association who publishes, delivers or distributes an advertisement concerning a venereal disease, lost manhood, lost vitality, impotency, sexual weakness, seminal emissions, varicocele, self abuse or excessive sexual indulgence.

MEDICAL BILLS IN CONGRESS

Changes in Status.—S. 194 has been ordered reported by the Senate Committee on Education and Labor, proposing to authorize research by the United States Public Health Service with respect to the cause, diagnosis and treatment of dental diseases. S. 1290 has been reported to the Senate, providing that any person, whether or not in the employ of the United States, who shall furnish blood from his or her veins for transfusion into the veins of a person entitled to and undergoing treatment at government expense, whether in a federal hospital or institution or in a civilian hospital or institution, or who shall furnish blood for blood banks or for other scientific and research purposes, shall be entitled to be paid therefor such reasonable sum, not to exceed $50, for each blood withdrawal as may be determined by the head of the department or agency concerned, from public funds available to such department or independent agency for medical and hospital supplies. H. R. 2475 has passed the House, proposing to prohibit prostitution within such reasonable distances of military or naval establishments as the Secretaries of War or Navy shall determine.

Bills Introduced.—S. 1375, introduced by Senator McCarran, Nevada, proposes a federal appropriation of $150,000,000 to provide for certain community facilities made necessary by the exigencies of national defense, the term "community facility" being defined to include (*a*) buildings, grounds and incidental equipment for grammar schools, high schools, hospitals and clinics, (*b*) sewerage and water systems and (*c*) facilities, including buildings, grounds and incidental equipment, to provide for the welfare of members of the land and naval forces of the United States. H. R. 4337, introduced, by request, by Representative Lesinski, Michigan, proposes to grant permanent and total disability ratings to disabled men of the Army, Navy, Marine Corps and the Coast Guard suffering from severe industrial inadaptability as a result of active service. H. R. 4477, introduced by Representative Weaver, North Carolina, provides for domiciliary, medical and hospital treatment to certain former members of the Army, Navy, Marine Corps and Coast Guard. H. R. 4476, introduced by Representative May, Kentucky, provides for sundry matters affecting the military establishment. Among other things, this bill proposes to provide for the employment of interns in the Medical Department of the Army at not to exceed $720 a year. H. R. 4484, introduced, by request, by Representative Camp, Georgia, would authorize the Administrator of Veterans' Affairs to grant a disability rating of at least 1 per cent to any enlisted man of the Army, Navy, Marine Corps or Coast Guard who has been discharged for physical disability or on medical survey for disability adjudged to have occurred in line of duty, provided the disability renders the enlisted man unacceptable for reenlistment. H. R. 4485, introduced by Representative Collins, Mississippi, provides that the federal contribution to states for aid to crippled children under the Social Security Act shall be determined according to financial need for assistance. H. R. 4523, introduced by Representative Connery, Massachusetts, proposes to authorize the President to issue an appropriate medal and ribbon to be awarded to members of the armed forces of the United States during the World War who in the interest of humanity and science acted as voluntary subjects for experimentations during the trench fever investigations in France.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ADDITIONAL MEDICAL COLLEGE NEWS AND ARTICLES APPEAR IN THE STUDENT SECTION, PAGE 2111.

ARKANSAS

Prize for Interest in Meetings.—Dr. Ira W. Ellis, Monette, received a radio recently from the Craighead-Poinsett Counties Medical Society. The award was based on attendance at meetings during 1940, interest and willingness to cooperate.

CALIFORNIA

Anesthetists Wanted.—A civil service examination to fill positions as head anesthetist and anesthetist in the Los Angeles County General Hospital, Los Angeles, is announced, applications to be filed by May 20. To qualify for the examination for head anesthetist, candidates must have the degree of doctor of medicine from an approved medical school and have satisfactorily completed at least one year's internship in an approved hospital. A residency or advanced training in the specialty of anesthesia and certification by the American Board of Anesthesiology is desirable. In addition, at least two years' recent practice in the specialty of anesthesia in a hospital of not less than two hundred beds is required. The salary will be $265 a month. Medical training and a one year internship is required for the position of anesthetist. Special training or experience in anesthesia service is desirable though not essential. The salaries for positions in this service are $225 and $240 a month. Application blanks and additional information can be obtained from the Los Angeles County Civil Service Commission, Room 102, County Hall of Records, Los Angeles. Arrangements may be made to hold the examinations outside Los Angeles County if a sufficient number of applications are received from persons in other sections of the country. The usual requirement concerning residence in the county has been waived.

CONNECTICUT

State Medical Meeting.—The one hundred and forty-ninth annual session of the Connecticut State Medical Society will be held at the Hotel Stratfield, Bridgeport, May 20-22, under the presidency of Dr. Arthur B. Landry, Hartford, and with the Fairfield County Medical Association acting as host. The following will participate:

Dr. William E. Studdiford Jr., New York, Chemotherapy in Pelvic Inflammatory Diseases.
Dr. Catharine Macfarlane, Philadelphia, Progress Report on an Experiment in the Control of Cancer of the Uterus.
Dr. Cornelius G. Dyke, New York, Interpretation of Encephalograms, Particularly in Relation to Trauma.
Dr. Henry K. U. Beecher, Boston, Relationship of Anesthesia to Surgical Shock.
Dr. Anthony J. Lanza, New York, Health Plans for Small Industries.
Dr. Jacob H. Fine, Beverly, Mass., Fluid Balance in the Preoperative and Postoperative Patient.
Dr. Wesley Bourne, Westmount, Que., Breathing in Anesthesia.
Dr. Walter Freeman, Washington, D. C., Surgical Treatment of Mental Disorders.
Dr. Donald Ewen Cameron, Albany, N. Y., Problems of Civilian Mental Health.
Dr. Martin S. Kleckner, Allentown, Pa., Facts and Fallacies Regarding Proctologic Conditions.
Dr. LeRoy A. Schall, Boston, Cancer of the Upper Respiratory Tract.
Dr. Anthony C. Cipollaro, New York, Skin Diseases of Childhood.
Dr. Ross Golden, New York, Roentgen Ray Examination in the Treatment of Ileus with the Miller-Abbott Tube.
Dr. Hattie E. Alexander, New York, Treatment of Influenzal Meningitis.
Dr. Marius N. Smith-Petersen, Boston, Sciatica from an Orthopedic Point of View.
Dr. Theodor Blum, New York, Rhinology and Oral Surgery, Their Interrelation and the Necessary Cooperation of Both Specialists.
Mr. James E. Bryan, executive secretary, Medical Society of the County of Westchester, New York, A General Practitioner's Section.
Dr. Madge C. L. McGuinness, New York, Physical Therapy in Some Gynecologic Conditions.
Dr. Arthur M. Yudkin, New Haven, Vitamin Therapy in Ophthalmology.

There will be a conference of selective service physicians with Col. Ernest L. Averill, director of selective service for Connecticut, discussing operation of the service, and Dr. Eugen Kahn, New Haven, "Psychiatric Suggestions Concerning Selection for Military Service." Major William B. Smith, Wethersfield, medical officer attached to the selective service system, will conduct a question and answer period. Gov. Robert A. Hurley will address the annual dinner of the society and Remsen B. Ogilby, Litt.D., president, Trinity College, Hartford, will speak on "Education Begins at Thirty." Hugh P. Beirne, commissioner of pharmacy for the state, will address a general luncheon on "Interprofessional Relations," and Dr. Sydney E. Sinclair, New Haven, will speak under the auspices of the Hezekiah Beardsley Pediatric Club on "Severe Infections Due to the Organism Causing Influenzal Meningitis." Mr. James A. Hamilton, director of New Haven Hospital, will also address one dinner session. Organizations meeting as guests of the state medical society include the Connecticut Hospital Association, the Woman's Medical Society of Connecticut, American Society of Anesthetists, Connecticut Occupational Therapy Society, Hospital Medical Record Librarians' Association of Connecticut and the Connecticut branch of the American Association of Medical Social Workers.

GEORGIA

State Medical Meeting in Macon.—The Medical Association of Georgia will hold its annual scientific session in Macon at the Municipal Auditorium, May 13-16, under the presidency of Dr. Job Caldwell Patterson, Cuthbert. The Bibb County Medical Society will act as host. Among the speakers will be:

Dr. Hervey M. Cleckley, Augusta, The So-Called Psychopathic Personality.
Dr. James G. McDaniel, Atlanta, Air Embolism as a Cause of Death.
Dr. James E. Baylis, colonel, medical corps, U. S. Army, Medical Preparedness.
Drs. Allen H. Bunce, Mark S. Dougherty Jr., and Robert C. Davis, Atlanta, Clinical Studies of Secondary Anemia.
Dr. Russell L. Cecil, New York, The Plight of the Arthritic.
Dr. Daniel C. Elkin, Atlanta, The Special Field of Cardiac Surgery.
Dr. Virgil P. W. Sydenstricker, Augusta, Multiple Factors in Deficiency Disease.
Dr. Louis L. Williams Jr., U. S. Public Health Service, Public Health and the Defense Program.
Dr. James Elliott Scarborough Jr., Emory University, Cancer of the Mouth.

One discussion will be held on problems of the kidney with the following speakers: Drs. Samuel J. Sinkoe, Atlanta; Rudolph Bell, Thomasville, and Spencer A. Kirkland, Atlanta. The Abner Wellborn Calhoun Lecture will be delivered Wednesday May 14 by Dr. John Alexander, professor of surgery, University of Michigan Medical School, Ann Arbor, on "The Management of Intrathoracic Tumors." Dr. Patterson will give his presidential address Thursday at noon on "Georgia's Medical Problems of Today." Dr. Roy R. Kracke, Emory University, and Dr. Sydenstricker will conduct a luncheon panel discussion Thursday on internal medicine and Drs. Thomas C. Davison, Atlanta, and John H. Sherman, Augusta, one on appendicitis.

ILLINOIS

State Medical Meeting.—The one hundred and first annual meeting of the Illinois State Medical Society will be held at the Palmer House, Chicago, May 20-22, under the presidency of Dr. James S. Templeton, Pinckneyville. Speakers from out of the state include:

Dr. Chester A. Stewart, Minneapolis, Tuberculosis: Its Two Clinically Demonstrable Phases of Development.
Dr. Ray F. Farquharson, Toronto, Canada, Anorexia Nervosa.
Dr. James H. Means, Boston, The Eye Problems in Graves' Disease.
Dr. Isidor S. Ravdin, Philadelphia, Some Problems of the Biliary Tract.
Drs. James B. Costen and William T. K. Bryan, St. Louis, Diagnosis of Cancer of the Esophagus.
Dr. John D. Camp, Rochester, Minn., Osteoporosis and Its Relation to Systemic Disease.
Dr. Frank R. Smith, New York, Early Diagnosis of Malignant Tumors of the Female Genital Organs.
Dr. Frederick A. Coller, Ann Arbor, Mich., Some Problems of Water and Electrolyte Loss in Surgery.
Dr. William Lloyd Aycock, Boston, Susceptibility to Paralysis in Poliomyelitis.
Dr. Oswald P. J. Falk, St. Louis, The Doctor and Coronary Disease.

Dr. John H. Musser, New Orleans, will deliver the annual oration in medicine Tuesday evening on "The Aging Heart" and Dr. Owen H. Wangensteen, Minneapolis, the oration in surgery, entitled "Role of the Surgeon in the Management of the Peptic Ulcer Problem." Tuesday afternoon there will be a symposium on nutrition. At the secretaries' conference, Tuesday evening, the speakers will be Dr. Robert A. Bier, Washington, D. C., on "The Selective Service System as It Affects the Practice of Medicine and the National Defense in Illinois" and Dr. Charles H. Phifer, Chicago, "Social Security Clients." Branch 2 of the American Medical Women's Association will be host to the Medical Women's Association, May 20-21. Among the speakers will be Dr. Esther C. P. Lovejoy, New York, on "American Women's Hospitals in the Defense Program." Other groups meeting at this time will be the Illinois

Society of Pathologists, Physicians' Association of the State Department of Public Welfare of Illinois and the Chicago Society of Industrial Medicine and Surgery. The Veterans' Service Committee dinner will be Tuesday evening with Col. Paul G. Armstrong, director, Illinois Selective Service, discussing "Selective Service, What It Is and What It Means." William F. Waugh, department commander, Department of Illinois, American Legion, will also speak. The fourteenth annual convention of the Woman's Auxiliary to the Illinois State Medical Society will be held May 20-21.

Chicago

The Capps Prize.—The Institute of Medicine of Chicago announces that the Joseph A. Capps Prize of $400 for 1940 has been awarded to Dr. David N. Danforth, Evanston, for his investigation on "The Anatomy of Labor as Revealed by Frozen Sagittal Sections of the Macacus Rhesus Monkey and of Man." Dr. Danforth graduated at Northwestern University Medical School in 1939.

Course in Anomalies of the Eyes.—Children's Memorial Hospital announces a course in neuromuscular anomalies of the eyes at the hospital, May 18-23, the lectures to be given by Dr. George P. Guibor. The course will include didactic lectures and clinical demonstrations of muscle defects of the eyes. Inquiries regarding the course may be addressed to the Children's Memorial Hospital, 707 Fullerton Avenue.

Memorial to Dr. Fantus.—A bronze plaque was dedicated to the memory of Dr. Bernard Fantus in the new outpatient clinic building at Cook County Hospital in a ceremony on the first anniversary of his death, April 14. The plaque was presented by Dr. David J. Davis, dean and professor of pathology, University of Illinois College of Medicine, and accepted by Dr. Karl A. Meyer, county medical superintendent. Dr. Fantus, for whom the outpatient clinic building is named, founded the blood bank in the county hospital.

IOWA

Personal.—Dr. Norman D. Render, formerly of the staff of the Cherokee State Hospital, Cherokee, has been appointed superintendent of the Clarinda State Hospital, Clarinda, succeeding the late Dr. Roscoe D. Smith.

Recording Room at Annual Session.—During the annual session of the Iowa State Medical Society in Davenport, May 14-16, the speakers bureau will set aside a room where scientific recordings will be run continuously. The bureau has a group of ten recordings which may be heard by any physician during the meeting. The bureau considers this a new kind of postgraduate instruction.

KANSAS

Obstetric Society.—The Kansas State Obstetrical and Gynecological Society was organized in Wichita recently under the auspices of the committee on maternal welfare of the state medical society. The following officers were chosen: Drs. Ray A. West, Wichita, president; Porter D. Brown, Salina, vice president; Lucien R. Pyle, Topeka, secretary. The principal speaker at the meeting was Dr. Leroy A. Calkins, Kansas City, Mo., professor of obstetrics and gynecology, University of Kansas School of Medicine.

State Medical Meeting in Topeka.—The eighty-second annual meeting of the Kansas Medical Society will be held in Topeka, May 13-15, under the presidency of Dr. Forrest L. Loveland, Topeka. Out of state speakers will be:

Dr. George H. Gardner, Chicago, Gynecologic Management of the "Barren Marriage."
Dr. Eugene M. Landis, Charlottesville, Va., Diagnosis of Peripheral Vascular Diseases.
Dr. James Emerson Dailey, Houston, Texas, The Problem of Controlling Tuberculosis.
Dr. John A. Toomey, Cleveland, The Differential Diagnosis of Meningeal Irritations.
Dr. Roger L. J. Kennedy, Rochester, Minn., The Significance of Vomiting and Diarrhea in Infants and Children.
Dr. John R. Nilsson, Omaha, The Open Reduction of Fractures.
Dr. Sumner L. S. Koch, Chicago, The Repair of Divided Nerves and Tendons.
Dr. Albert M. Snell, Rochester, Minn., Changing Conceptions of Portal Cirrhosis.
Dr. Louis J. Hirschman, Detroit, A Simple and Effective Technic of Hemorrhoidectomy.
Dr. Morris Edward Davis, Chicago, Use and Abuse of Cesarean Section.
Dr. Arthur L. Smith, Lincoln, Neb., Cardiac Murmurs.
Dr. Nathan A. Womack, St. Louis, Pathogenesis of Cholecystitis.
Lieut. Col. Richard H. Eanes, Washington, D. C., The Selective Service Act.
Dr. Thomas Roy Gittins, Sioux City, Iowa, Laryngotracheobronchitis.
Dr. Bennett Y. Alvis, St. Louis, Surgical Procedures.

MAINE

Society News.—The Kennebec County Medical Association was addressed, March 20, in Gardiner by Dr. Charles E. Ayers, Worcester, Mass., on "Relation of Trauma to Rupture of Nucleus of Corpus Pulposus."——Dr. Edward T. Whitney of the Boston Dispensary discussed "Rectal Diseases and Their Diagnosis" before the Knox County Medical Society in Rockland, March 11.——Frederick Martin, director of speech clinics, Rhode Island College of Education, Providence, spoke on "Prevention and Correction of Speech Defects" before the Penobscot County Medical Association, March 18.——The Cumberland County Medical Association was addressed in Eugene, March 28, by Dr. Champ Lyons, Boston, on chemotherapy and on April 25 by Dr. Edward B. Benedict, Boston, gastroscopy.

MICHIGAN

Annual Clinic.—The Ingham County Medical Society held its annual clinic in Lansing May 1. A round table discussion on the management of obesity opened the session; the speakers were Drs. Tom D. Spies, Birmingham, Ala., and Louis Harry Newburgh, Ann Arbor. Others on the program were:

Dr. William A. Scott, Toronto, Ont., Antepartum Hemorrhage.
Dr. John S. Lundy, Rochester, Minn., The Choice of an Anesthetic.
Dr. John Scudder, New York, Evaluation of Shock and Its Treatment.
Dr. Owen H. Wangensteen, Minneapolis, Management of Abdominal Distention.

Dr. Spies will discuss "Avitaminosis and Nutrition" at the dinner session.

New Director of Crippled Children's Commission.—Dr. Carleton Dean has resigned as deputy health commissioner and director of the bureau of local health service, Michigan State Department of Health, Lansing, to become medical director of the Michigan Crippled Children's Commission, Detroit, effective April 1. Dr. Dean was for nine years health officer of the district unit at Charlevoix. He has served as president of the Michigan Public Health Association. Dr. Eldred V. Thiehoff, who has been assistant director in the bureau of local health services, working with county and district health departments, has been made acting deputy health commissioner and director of the bureau. Until his appointment a year ago as assistant director, Dr. Thiehoff had been since 1935 the first director of a district health department composed of Gladwin, Clare and Arenac counties with headquarters in Gladwin. He graduated at the University of Pennsylvania School of Medicine in 1924.

Dr. LeFevre Honored.—Dr. George L. LeFevre was guest of honor at a banquet in Muskegon, March 19, marking completion of fifty years in practice. The banquet was under the combined auspices of the chamber of commerce, the Muskegon County medical and dental societies and other civic groups. Dr. LeFevre, now 75 years of age, began practice in Muskegon in 1891. He was president of the Muskegon County Medical Society in 1905 and in 1922. In 1920 he was elected a member of the council of the Michigan State Medical Society, serving until 1933. He has been chief of staff of Mercy Hospital since 1919. For many years he was a member of the state board of registration in medicine. At the recent banquet Walter B. Steele, D.D.S., was toastmaster and speakers were Drs. Eugene S. Thornton on "Past Associations"; Burton R. Corbus, Grand Rapids, "The Army's Dependence on the Medical Profession," and Mr. O. A. Seyferth, "Civic Activities." A scroll acknowledging his fifty years' service was presented to Dr. LeFevre.

MISSISSIPPI

State Medical Meeting in Biloxi.—The seventy-fourth annual session of the Mississippi State Medical Association will be held in Biloxi, May 13-15, with headquarters at the Buena Vista Hotel and under the presidency of Dr. William H. Anderson, Booneville. The speakers from out of the state will be:

Dr. William W. Waddell Jr., Charlottesville, Va., Role of Vitamin K in the Etiology, Prevention and Treatment of Hemorrhage in the Newborn Infant.
Dr. Martha M. Eliot, Washington, D. C. (subject not announced).
Dr. Oscar Wilkinson, Washington, Reports of the Early Operative Treatment of Squint.
Dr. Jack S. Guyton, Baltimore, Etiologic Diagnosis of Uveitis.
Dr. George T. Pack, New York, The Management of Metastatic Cancer in the Groin.
Dr. Maxwell E. Lapham, New Orleans, The Obligation of a Medical School to the Community.
Dr. Seale Harris Sr., Birmingham, Ala., Foods and Fads.

A round table discussion will be held Tuesday evening by Dr. Wilkinson on the subject of squint and one by Dr. Guyton on uveitis. The woman's auxiliary to the state medical association will hold its eighteenth annual convention at the Buena Vista

Hotel, May 13-15. The Mississippi State Pediatric Society will devote its session to round table discussions with Dr. George M. Lyon, Huntington, W. Va., addressing the banquet on "Sulfanilylguanidine in the Treatment of Bacillary Dysentery." The twelfth annual meeting of the Mississippi State Hospital Association will be held at the Buena Vista Hotel, May 12.

NEW HAMPSHIRE

State Medical Meeting at Manchester.—The one hundred and fiftieth annual meeting of the New Hampshire Medical Society will be held at Manchester, May 13-14, under the presidency of Dr. Ezra A. Jones of that city. There will be round table conferences each morning and a symposium on fractures Tuesday afternoon by Drs. Augustus Thorndike, George W. Van Gorder and Otto J. Hermann, Boston. Other speakers will be:

Dr. Frank H. Lahey, Boston, President-Elect of the American Medical Association, Management of Lesions of the Stomach, Duodenum and Jejunum.
Dr. Paul A. Chandler, Boston, Glaucoma.
Dr. Stanley B. Weld, Hartford, Conn., The National Physicians' Committee.
Dr. Jones, Orthopedics in New Hampshire.
Dr. William J. Brickley, Boston, The Work of the Medical Examiner.

Dr. Lahey will also speak at the anniversary banquet on "Economic Problems of Today." Other banquet speakers will be Dr. Henry H. Amsden, Concord, who will give an address on "The Doctor of One Hundred and Fifty Years Ago," Dr. Marion Fairfield, Nashua, who will read a paper on "Josiah Bartlett" prepared by the late Dr. Thomas W. Luce, Portsmouth, and Gov. Robert O. Blood. Governor Blood is speaker of the society's house of delegates.

NEW JERSEY

Dr. Eagleton's Gift to the Academy.—Dr. and Mrs. Wells P. Eagleton, Newark, have given to the Academy of Medicine of Northern New Jersey in Newark a house adjoining the academy's headquarters. The building, which will be joined to the present one, will be called the Eagleton Civic Medical House. It was said that Dr. and Mrs. Eagleton made the gift "to provide a place where doctors may be free to discuss the medical aspect of any public question." The academy will also be able to enlarge its library facilities. Dr. Eagleton was president of the academy from 1931 to 1933.

Society News.—Dr. William D. Stroud, Philadelphia, addressed the Gloucester County Medical Society, Woodbury, April 17, on "The Clinical Side of the Diagnosis of Heart Disease."——A symposium on "Postpartum Hemorrhage" was presented before the Bergen County Medical Society, Hackensack, April 8, by Drs. Arthur M. Reich, Claude E. Heaton and Irwin Wellen, all of New York.——Dr. Frederick C. Irving, Boston, addressed the Academy of Medicine of Northern New Jersey, Newark, April 17, on "Treatment of Separation of the Placenta with Spanish Windlass and Packing."

NEW YORK

"Doctors for Defense."—The Medical Society of the State of New York began, April 9, a new series of half hour dramatic radio programs entitled "Doctors for Defense." The series will show the physician in every phase of the defense training program: housing, feeding, physical hardening, adaptation to climatic changes, recreation, mental and physical hygiene, sanitation. It will show preparation for treating illnesses and disabilities when they occur, provisions for field hospitals, ship hospitals and air ambulances, then the doctor as a factor in the creation of an efficient air corps, submarine operation and the various other branches of armed defense, his place in industry and in preserving the health of the civilian population. The programs are heard Wednesday evenings on WMCA, 570 kilocycles, from 10 to 10:30 o'clock eastern standard time.

New York City

Twenty-Five Lepers in City.—A homeless man aged 33 was found to have leprosy on examination at Bellevue Hospital recently. It was said that the man had worked in a restaurant in Los Angeles for three years until about a month ago. There are 25 lepers in the city, none of them isolated, according to the New York *Times*, April 10.

Advisory Board for Health Museum.—Seventy authorities in medicine and public health, including fifty physicians, comprise the scientific advisory board of the American Museum of Health, which is to open in the summer in the former Masterpieces of Art Building on the world's fair site. Dr. Haven Emerson is chairman of the new board, whose duty it will be "to see that vital health knowledge is presented whole and honestly for visitors," according to an announcement.

Personal.—Stefan Ansbacher, D.Sc., associate in charge of vitamin research at the Squibb Institute for Medical Research, New Brunswick, N. J., has been appointed research director in the International Vitamin Corporation.——Dr. Francis J. O'Brien, director of the bureau of child guidance in the city school system, has been appointed an associate superintendent. ——Dr. Julius Lewis Amster has been elected president of the medical board of Morrisania Hospital to succeed Dr. Nathan B. Van Etten, President of the American Medical Association, who has served five consecutive terms.——Dr. August W. F. Westhoff, Richmond Hill, was honored at a testimonial dinner by two hundred of his colleagues and other friends recently at Essex House to mark his fiftieth anniversary in the practice of medicine.

NORTH DAKOTA

State Medical Meeting at Grand Forks.—The annual meeting of the North Dakota State Medical Association will be held at Grand Forks, May 19-21, under the presidency of Dr. Cyril J. Glaspel, Grafton. Dr. Morris Fishbein, Chicago, Editor of THE JOURNAL, will be the principal speaker at an open evening meeting, May 19, on "Medicine in a Changing World." Guest speakers for the scientific program will include:

Capt. Robert A. Bier, M.R.C., U. S. Army, Washington, D. C., The Physician in the Selective Service Program.
Dr. Edward H. Rynearson, Rochester, Minn., Vitamins.
Dr. Elexious T. Bell, Minneapolis, Pathology of Heart Disease.
Dr. MacNider Wetherby, Minneapolis, Therapeutic Procedures in Chronic Rheumatoid Disease.
Dr. Walter A. Fansler, Minneapolis, Cancer of the Large Bowel.
Dr. Henry E. Michelson, Minneapolis, Diseases of the Skin.
Dr. William A. Coventry, Duluth, Minn., Management of the Breech.

There will be symposiums on heart disease and traumatic injuries, and round table luncheon discussions each day, and an open forum on obstetric problems.

PENNSYLVANIA

Society News.—Dr. Robert S. Hotchkiss, New York, addressed the Northampton County Medical Society at a meeting at the Northampton Country Club near Easton, April 25, on "Factors in Male Sterility."——Speakers at a meeting of the Westmoreland County Medical Society, Greensburg, April 1, were Drs. Michael E. Farah, New Kensington, on "Treatment of Early Syphilis"; Edward J. Moore, Irwin, "Skin Manifestations of Syphilis," and David A. Walker, Torrance, "Cerebrospinal Syphilis."

Education and the Exceptional Child.—The seventh conference on education and the exceptional child under the auspices of the child research clinic of the Woods Schools, Langhorne, will be held on May 13. The speakers will be:

Howard Yale McClusky, Ph.D., Washington, D. C., American Youth and the Present Crisis.
Harry J. Baker, Ph.D., Detroit, Is Our Present Educational Program Adequate for the Exceptional Child?
Dr. Walter F. Dearborn, Cambridge, Mass., Growth and Learning in the Education of Exceptional Children.
T. Ernest Newland, Ph.D., Harrisburg, Can the Present Educational Program for the Exceptional Child Be Improved?
Dr. Leslie B. Hohman, Baltimore, Sex Education for Children and Parents.
Norma E. Cutts, Ph.D., New Haven, Conn., Vocational Guidance as Applied to the Exceptional Child.

Philadelphia

Dr. Krusen Retires as College Head.—Dr. Wilmer Krusen, president of the Philadelphia College of Pharmacy and Science since 1927, retired March 31 with the title of president emeritus and Ivor Griffith, Pharm.D., dean of pharmacy at the college, was elected to succeed him. Dr. Krusen graduated from Jefferson Medical College of Philadelphia in 1893. In 1902 he became professor of gynecology at Temple University School of Medicine; in 1913 he was elected a trustee and in 1914 vice president of the university. Dr. Krusen was director of public health of Philadelphia from 1916 to 1920 and again from 1924 to 1928. Dr. Griffith, a native of Wales, graduated from the Philadelphia College of Pharmacy in 1910. He was appointed instructor at the college in 1916 and has served in various capacities. He was appointed professor of theoretical pharmacy in 1935 and in 1938 succeeded the late Charles H. LaWall, Pharm.D., as dean of pharmacy. Dr. Griffith has resigned as editor of the *American Journal of Pharmacy* after serving since 1921. His successor as editor is Linwood F. Tice, M.S., assistant professor in pharmacy at the college.

Pittsburgh

Health Classes for the Public.—A series of classes in health and hygiene was presented by the Allegheny County Medical Society in conjunction with the Pittsburgh Public Schools beginning March 24 and continuing for six Monday evenings. Those eligible to attend were men employed in service merchandising and in hotels, restaurants and amusements. The speakers were Drs. Oliver E. Turner on public health as it affects the individual; Millard C. Hanson, syphilis; George E. Martin, tuberculosis; George J. Kastlin, pneumonia; Harold P. Hook, general health measures, and Andrew P. D'Zmura, heart disease.

SOUTH DAKOTA

State Medical Meeting at Mitchell.—The sixtieth annual session of the South Dakota State Medical Association will be held in Mitchell, May 18-20, under the presidency of Dr. Oscar J. Mabee, Mitchell. Speakers will be:

Dr. Vernon L. Hart, Minneapolis, Heredity and Disease of the Skeletal System.
Dr. Kenneth C. Swan, Iowa City, Insidious Loss of Vision.
Dr. Joseph C. Ohlmacher, Vermillion, The Medical Profession's Responsibility in the Control of Cancer.
Dr. Sumner L. S. Koch, Chicago, Some Surgical Principles in the Treatment of Infections of the Hand.
Dr. Willis H. Thompson, Minneapolis, Bleeding Tendencies in the Newborn and Their Prevention.
Dr. Henry E. Michelson, Minneapolis, The Relationship of Dermatology to General Medicine.
Dr. Frederic E. B. Foley, St. Paul, Diagnosis and Treatment of Bladder Neck Obstruction.
Dr. Robert G. Allison, Minneapolis, Progress of X-Ray Technic.
Dr. James B. Carey, Minneapolis, Chronic Gastritis.

The guest speakers will conduct clinics in their specialties at morning sessions. At the annual banquet Monday evening Dr. Roy W. Fouts, Omaha, will be the speaker on "The Art of Medicine."

TEXAS

New Health Officers.—Dr. Thomas J. Pennington, Nacogdoches, has been named health officer of Nacogdoches County, it is reported. Dr. William W. Carter, Corsicana, has succeeded Dr. Otho C. Bowmer, Corsicana, as health officer of Navarro County. Dr. Stephen W. Wilson, formerly of Poteet, has been appointed director of the San Augustine-Sabine bi-county health unit, with headquarters in San Augustine. Dr. La Ried S. Oates, Center, has been appointed health officer of Shelby County to succeed Dr. William Spencer Warren, Center. Dr. George A. Gray, Sweetwater, recently director of the Sweetwater-Nolan County health unit, has been appointed director of a new unit for Abilene and Taylor County.

WEST VIRGINIA

State Medical Meeting at Charleston.—The seventy-fourth annual session of the West Virginia State Medical Association will be held in Charleston, May 12-14, with headquarters at the Daniel Boone Hotel. Dr. Morris Fishbein, Chicago, Editor of THE JOURNAL, will address a public meeting, Monday evening May 12, on "The Prolongation of Life," and Dr. Robert King Buford, Charleston, will give his presidential address Tuesday evening on "The Physician in the Changing Order." The annual oration on medicine will be given by Dr. Jacob Arnold Bargen, Rochester, Minn., on "Important Newer Concepts Concerning Cancer of the Intestine and Their Bearing on Management" and the oration on surgery by Dr. Hugh A. Bailey, Charleston, on "Operative Wounds, Treatment and Healing." Guest speakers who will address the general scientific assembly and section meetings include:

Dr. Stanley Gibson, Chicago, Rheumatic Fever.
Dr. William G. Leaman Jr., Philadelphia, Prognosis in Heart Disease.
Dr. Henry H. Kessler, Newark, N. J., Amputations of the Upper and Lower Extremities.
Dr. Charles E. Kinney, Cleveland, Handling of Hearing Problems in General Practice.
Dr. Edgar van Nuys Allen, Rochester, Minn., Importance of Differentiating Psychoneurotic and Somatic Pain from Visceral Pain.
Dr. Tiffany J. Williams, Charlottesville, Va., Management of the Toxemias of Late Pregnancy.
Dr. George J. Thomas, Pittsburgh, Choice of Anesthetics for Emergency Procedures.
Dr. Isidor S. Ravdin, Philadelphia, Some Problems of Biliary Tract Surgery.

Drs. Royd R. Sayers, U. S. Bureau of Mines, Bethesda, Md.; Paul A. Neal, U. S. Public Health Service, Bethesda, and Dr. Kessler will address the West Virginia Society of Industrial Physicians and Surgeons. Other special societies meeting with the state association include the West Virginia Heart Association with Dr. Leaman as its guest, and the West Virginia Obstetrical and Gynecological Society, with Dr. Williams as guest. The Woman's Auxiliary will hold its meeting during the three days, with Dr. Fishbein as guest speaker at a luncheon Tuesday.

VERMONT

Personal.—Dr. George A. Elliott, assistant superintendent of the Connecticut State Hospital, Middletown, has been appointed superintendent of the Brattleboro Retreat, Brattleboro. He succeeds Dr. Horace G. Ripley, resigned.

Society News.—Dr. Charles K. P. Henry, Montreal, Canada, addressed the Rutland County Medical Society in Rutland April 17 on "Early Diagnosis of Bone Tumors." Dr. Neil Feeney, Montreal, addressed the society March 20 on "Diagnosis and Modern Treatment of Subacute Endocarditis."

GENERAL

Alumni Meetings at Cleveland.—The Alumni Association of the University of Minnesota Medical School will hold an informal social get-together at the Hotel Cleveland, Cleveland, Wednesday June 4, from 5:30 to 7:30 p. m.——The annual banquet of the St. Louis Medical Alumni Association will be held at the Hotel Statler in Cleveland, June 4, at 7:30 p. m. Three dollars for each person will be charged.

Circulating Library of Music.—Mr. A. L. Rose, vice president of Mead Johnson & Company, Evansville, Ind., has recently organized a free circulating library of music for physicians' orchestras, which physicians throughout the country are invited to use. The music may be kept for six months. In their requests physicians are asked to state the orchestration wanted, name of piece, composer and arranger and name of publisher, and to furnish as much information on their own orchestras as possible.

New President for the Pharmacopeia.—Following the death of Dr. Charles W. Edmunds, Ann Arbor, Mich., president of the United States Pharmacopeia, the board of trustees of the Pharmacopeia at a meeting in New York, April 12, elected Dr. Cary Eggleston, New York, president. Henry A. B. Dunning, Pharm.D., Baltimore, first vice president, was nominated to fill the unexpired term. He, however, declined the succession because of lack of experience and because of his belief that the traditional plan in force for many years, providing that a medical man should be president of the convention and a pharmacist chairman of the board of trustees, is a good plan and should be maintained.

New Director of Committee on Maternal Health.—Name to Be Changed.—The National Committee on Maternal Health recently announced the appointment of Dr. Clair E. Folsome, formerly of Ann Arbor, Mich., as executive director to succeed Dr. Raymond R. Squier, New York, who resigned to devote full time to private practice. The committee also voted to change its name to the Research Council on Human Reproduction, Inc., and legal proceedings are now in progress to effect the change. The organization plans to continue in a research capacity its studies on problems of human fertility and infertility. Dr. Folsome, who graduated from the University of Michigan Medical School, Ann Arbor, in 1933, has recently been field consultant in obstetrics for the Michigan State Department of Health.

American Urological Association.—The annual meeting of the American Urological Association will be held at the Broadmoor Hotel, Colorado Springs, May 19-22, under the presidency of Dr. Thomas Leon Howard, Denver. Among speakers on the program will be:

Drs. Clarence G. Bandler and Arthur H. Milbert, New York, Urologic Aspects of Military Preparedness and Combat.
Dr. Elmer Hess, Erie, Pa., Intracystic Reimplantation of the Ureter: A New Operative Technic.
Drs. Roger C. Graves, Boston, and Lewis W. Guiss, New York, Tumors of the Urethra in the Female.
Drs. Charles B. Huggins, Clarence V. Hodges and Roland E. Stevens Jr., Chicago, Endocrine Influences on Metastatic Carcinoma of the Prostate.
Dr. Edwin Davis, Omaha, Antiseptic Aniline Dyes in the Treatment of Submucous Ulcer.
Drs. Edward W. Beach, Sacramento, Calif., and William G. Shultz, Tucson, Ariz., Spontaneous Healing in Renal Tuberculosis.
Dr. William F. Braasch, Rochester, Minn., Prognosis in Nonsurgical Bilateral Renal Tuberculosis.
Drs. Vincil Rogers Deakin and John F. Patton, St. Louis, Sulfathiazole in 200 Cases of Male Gonorrhea.
Drs. Grayson L. Carroll, Hollis N. Allen and Louis C. Kappel, St. Louis, Sulfathiazole and Its Sodium Salt, Effectiveness and Limitations.

Dr. Irvine H. Page, Indianapolis, will give the Ramon Guiteras Lecture and Dr. Howard his presidential address on Wednesday afternoon, May 21.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 1, 1941.

The Food Situation

The food situation in this second year of the war can be summed up as being sufficient for nutrition of every one but restricted as to choice. Lord Dawson said in the House of Lords that this was the first totalitarian war, and civilians contributed a larger measure to the fighting than ever. Therefore there should be a nearer equation between their food and that of the forces. The nation had suffered little dislocation of its life by rationing, and there was no evidence of resulting malnutrition, though there was a reduction in weight in some parts of the population. This generation had inherited a strong habit of eating meat. It was a valuable food, but its virtues could be obtained from a smaller quantity. When the minister of food curtailed our meat ration he did us no harm provided we had certain essential foods—wholemeal bread, milk, cheese, potatoes, carrots, green vegetables and fruit.

Lord Woolton, minister of food, said it was impossible to wage war and live to the standard to which we had grown used. We must be ready for greater restrictions and go back to the days of simpler living. The bread supply of the country was ample and cheap. He had been fortified in his bread policy by scientific advice. Our greatest weakness was in the animal protein group. But we previously had been eating more meat than was good for us. The ships required to carry our troops were those which had been used to import meat. But we had potatoes, vegetable oils, fats and milk. Surely we could get all the health and energy we needed. We could not maintain our present supply of food from pigs, poultry, cattle and sheep, which depended on imported foodstuffs. Carrots were so important that he had asked the Ministry of Agriculture to arrange for 30,000 acres to be planted this year. Months ago he arranged for importation of all the powdered and skimmed milk which we could get from overseas. We were holding a reserve of powdered milk, so that in the event of an emergency we could still secure milk, particularly for children and the hospitals. It had been decided to import oranges to the extent of our capacity.

Special Hospitals for Rheumatism

The Empire Rheumatism Council states in its report for the year ended November 1940 that the decision to carry on its work during the war has been justified. Difficulties and dangers have been encountered, but with one exception the research tasks were continued until almost the close of the year. In October one of the laboratories was struck by a bomb. There were no casualties, but the fabric was seriously damaged. Substantial progress has been made with plans for a national scheme of treatment, and this is almost ready for publication. Medical research has a great part to play in bringing under control the causes of disease. It is fitting that researchers should keep to their tasks and follow the high example of doctors and nurses who stand by their patients in the shattered hospitals, which seem to be the favorite objectives of malignant barbarism. The council is endeavoring to establish specialized hospitals for rheumatism. A high incidence of the disease among the soldiers is regarded as probable. Since it is only recently that the medical profession has given special attention to the problem of rheumatism and the number of physicians with wide experience in its diagnosis and treatment is limited, it is held to be wise to concentrate their expert knowledge in specialized hospitals.

More Bombing of London Hospitals

The latest bombing of London hospitals involved two in one night. In one hospital several patients and a nurse were killed when three men's wards were wrecked. Doctors, nurses and rescue squads worked through the night by the light of torches to free those trapped in the wreckage, and before dawn all had been released. The bomb scored a direct hit, bringing part of the building to the ground. While the rescue operations were in progress, surgeons performed operations on the more seriously injured. One rescue worker said that he had never seen such bravery as that shown by the patients. Some of the nurses who helped were wearing dance frocks, as a staff dance was in progress in the nurses' home when the bomb fell, and the nurses and their partners rushed across to the damaged wards. The rescue work was complicated by the discovery of a delayed action bomb near another ward, which made it necessary to remove the patients. A children's hospital was damaged by two bombs the same night. Fortunately the children had been evacuated and there was only a skeleton staff on the premises. Extensive damage was done to both the hospital and the nurses' home, but there were no casualties.

Antigas Mask for Persons with Respiratory Difficulties

Your correspondent is in contact with the civil defense measures and is struck with their efficiency, in which no detail seems to be overlooked. An example is the provision of gas masks for the whole population, including special ones for babies. The most recent development is a mask for those who, on account of respiratory troubles, cannot wear standard gas masks or who, because of tracheotomy, facial deformity, or severe heart trouble cannot wear respirators of ordinary type. The question of suitable respirators for such persons has been the subject of prolonged study and research by the medical and antigas services of the government. Two new types have been devised. One consists of the ordinary civilian respirator with the addition of an outlet valve. The other is a helmet respirator operated by bellows in the same way as the baby's antigas mask. These respirators will be issued to those who establish the need for them by a certificate from a physician. Physicians will receive guidance from health officers and from articles to be published in the medical press.

Prof. William Bulloch

Dr. William Bulloch, F.R.S., emeritus professor of bacteriology in the University of London, has died at the age of 73 years. After a brilliant career he graduated at the University of Aberdeen. He then visited several continental schools and studied tuberculosis under Koch. He was appointed assistant professor of pathology at University College, London, and bacteriologist to the Lister Institute. In 1897 he was offered a chair of bacteriology in London University, which he held at the London Hospital. He was chairman of the governing body of the Lister Institute, an original member of the Medical Research Council and chairman of the committee which prepared its System of Bacteriology. Though not associated with any important advance in bacteriology, he had a great influence as an administrator, teacher, critic, writer and editor. His first notable published work was "Studies in Pathology" for the quarter centenary of the University of Aberdeen, to which he acted as general editor. In 1923, with F. W. Andrews and others, he wrote "Diphtheria: Its Bacteriology, Pathology and Immunology." His best known work was his "History of Bacteriology," published in 1938, which was founded on the Heath Clark Lectures, delivered in 1936 at the London School of Tropical Medicine. He made many contributions to the *Journal of Pathology and Bacteriology*. Toward the end he had the important job of passing all the well known operational catgut prepared at the London Hospital. At no time during his supervision was any infection traced to the stitches for which it was used.

BUENOS AIRES

(From Our Regular Correspondent)

Jan. 31, 1941.

Cocaine Content of Coca Leaves

Dr. Carlos A. Ricketts recently reported in *La crónica médica*, Lima (**57**:25 [Feb.], 73 [March] 1940), his investigations of the use of coca leaves. Some eight million persons chew coca leaves in Peru, Bolivia, Ecuador and Colombia. He points out that the Indians did not seem to have used coca in the first historical epoch. This seems to support the view that there is no evidence that the chewing of coca leaves is indispensable for living, traveling and working in the high altitudes of the Andes. Ricketts calls attention to the enormous social and hygienic damage caused by coca chewing, especially if combined with alcoholic excess. The young Peruvian Indian is, physically and mentally, a normal and capable human being until he takes up coca chewing. A few years ago the medical society of Arequipa, Peru, made extensive analytic studies both of coca leaves in their natural state and those which had been chewed for from thirty-five to forty minutes. (Coca leaves are generally chewed in combination with the alkaline ashes of a plant called llipta.) The analysis showed that on the basis of the lowest consumption of coca leaves, namely 50 Gm. daily, 42.5 mg. of cocaine is absorbed without llipta. This absorption increases to 91 mg. with llipta. This is a high dose, far in excess of the pharmacopeial dose. What makes it worse is that this absorption goes on day after day during the person's life.

The president of Peru has promulgated a decree temporarily suspending licenses for operating new establishments for the manufacture of crude cocaine until the department of health, labor and social welfare has been able to issue necessary regulations. The cultivation of the poppy has likewise been prohibited and the poppy fields under cultivation have been ordered to be destroyed. (Peru has a considerable proportion of Chinese among its inhabitants.)

The same picture of social and health deterioration due to the abuse of the coca plant is found in Bolivia. The coca plant is cultivated chiefly in the hot lowlands, in the departments of La Paz, Cochabamba, Potosí and Sucre. The revenues derived amount to three fourths of the total revenues in the first department and to one fifth in the others. Curtailment of coca plant acreage would thus lead to a deficit in the national budget. This deficit could, however, be overcome if other products such as coffee, rice and sugar were cultivated instead of the coca plant.

Diphtheria Control in Argentina

The fight against diphtheria is being waged in Argentina on different fronts. The city of Buenos Aires through the Asistencia pública has been urging antidiphtheria vaccination for months. In the last ten weeks about 36,000 school children have been inoculated. The need of antidiphtheria prophylaxis is emphasized by the reports emanating from Mendoza, capital of a western province, where a number of deaths have occurred. In the last sixteen years 188,000 children have been vaccinated by authority of the National Council of Education and not one serious accident was noted. The annual mortality from diphtheria still amounts to 1,500 deaths.

A measure has been introduced in the legislature making vaccination against diphtheria compulsory. In spite of the opposition, particularly of the socialists, the chamber of deputies finally passed the measure. It affects all children between the ages of 9 and 12 years and will involve no charge. The measure requires the ratification of the senate. The sum of 200,000 pesos (about $60,000) was voted the Bacteriologic Institute for the preparation of vaccines and an equal sum for the creation of a bureau for specific prophylaxis. Prof. Alfredo Sordelli, director of the institute, went on record as reversing the objections against antidiphtheria vaccination previously entertained by him. Formerly he had been opposed to compulsory vaccination because of the unreliability of the vaccines and the untoward after-effects which had been observed. Since then the preparation of vaccines had been improved. Sordelli advocated the vaccination especially of children from 1 to 6 years of age and stressed the need of a good organization. Several large provinces of Argentina already enforce antidiphtheria vaccination.

Hospital Service in Buenos Aires

According to an article by Prof. J. W. Tobias, former director of health administration and of public aid, in the *Revista medicina y ciencias afines* (**2**:461 [July 30] 1940) Buenos Aires has at its disposal 14,553 hospital beds, of which 9,660 are municipal and 2,959 national. Though the city population is 2½ million inhabitants, hospital bed capacity must be figured on the basis of accommodating the environs of the city. This increases the total to about 3,700,000. Of the 90,000 patients admitted to the hospitals of Buenos Aires, 22 per cent live in the interior of the country.

New Health Institute in Costa Rica

In Costa Rica a new health institute has been opened, comprising a bacteriologic laboratory, a chemical laboratory, a division of veterinary medicine and a division for the control of biologic products. It is to supervise all national, municipal and private laboratories and is charged with the control of epidemics and epizootics, with snake extermination and with supervising the use of animal, plant and bacterial poisons.

Brief Mention

Dr. Raúl Cibils Aguirre was elected director of the Public Aid in Buenos Aires. Dr. Tobías, his predecessor, resigned after a change in the city administration. Dr. Federico S. Piombo, a member of the surgico-orthopedic division of the children's clinic of Buenos Aires, has been authorized by the faculty of medicine of Buenos Aires to study the treatment of ankylosis in the United States. Dr. Carlos Fernández Speroni has departed for the United States, commissioned by the faculty of medicine of Buenos Aires to study endocrine diseases at Columbia University and the Mayo Clinic.

Grants from the Rockefeller Foundation have made it possible for four persons appointed by the government of Peru to come to the United States to study industrial hygiene, in preparation for the organization of a division of industrial hygiene in Peru.

In Paraguay the control of trachoma has been intensified. In Asunción, the capital, 224 cases of trachoma were found among four thousand school children. By a governmental decree the investigation of the causes of child mortality has also been started, to continue for two years.

The national service of Brazil for the control of yellow fever maintains at present 917 central centers operating on full time. Centers at which sections are performed number 1,268; most of these are situated in the provinces of Minas Geraes, São Paulo and Rio.

Marriages

GEORGE W. MORSE, Statesville, N. C., to Miss Sybil Annette Newman of Daytona Beach, Fla., January 23.

JOSEPH SPURGEON HIATT JR., Durham, N. C., to Miss Sarah Elizabeth Rankin of Gastonia in January.

AUBREY BIGGS HARWELL, Rochester, N. Y., to Miss Grace Follin at Bell Buckle, Tenn., in January.

WILLIAM CRUSE COLES, Augusta, Ga., to Miss Claire Johnston of St. George, S. C., February 15.

P. DAVID NUTTER, Beckley, W. Va., to Miss Laura Marsh of Oswego, N. Y., at St. Albans, W. Va., January 23.

Deaths

Louis Frank ✦ Louisville, Ky.; Hospital College of Medicine, Louisville, 1888; member of the House of Delegates of the American Medical Association in 1918; professor of bacteriology in 1892 and in 1896, professor of obstetrics from 1896 to 1898, professor of abdominal surgery from 1898 to 1908, professor of surgery from 1908 to 1931 and since 1931 professor emeritus at the University of Louisville School of Medicine; past president of the Kentucky State Medical Association; member and vice president of the Southern Surgical Association; member of the American Urological Association; fellow of the American College of Surgeons; chief of staff and attending surgeon, Norton Memorial Infirmary; consulting surgeon, Jewish Hospital, Children's Hospital and the Kosair Hospital for Crippled Children; aged 73; died, March 22, in Orlando, Fla., of pneumonia.

Edward Kimmel Cravener ✦ Schenectady, N. Y.; Ohio State University College of Medicine, Columbus, 1924; member of the American Academy of Orthopedic Surgeons; fellow of the American College of Surgeons; chairman of the medical advisory board 44, which serves draft boards throughout eastern New York; orthopedic surgeon, Schenectady City Hospital and Schenectady County Home and Hospital; consulting orthopedic surgeon, Benedict Memorial Hospital, Ballston Spa, Moses-Ludington Hospital, Ticonderoga, Saratoga Hospital, Saratoga and the Glenridge Sanatorium, Schenectady; aged 42; died, March 27, at Nassau, B. W. I.

Edward Lamar Clemens, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1915; member of the Medical Society of the State of Pennsylvania; associate in neurology at the University of Pennsylvania Graduate School of Medicine; assistant on the neurologic staffs of the Graduate, Temple and Lankenau hospitals; chief of the neurologic service of the Allentown (Pa.) Hospital; served during the World War; aged 54; died, March 1, of coronary occlusion.

Frederick Clifton Moor ✦ Tallahassee, Fla.; University of Maryland School of Medicine, Baltimore, 1903; in 1934 a member of the House of Delegates of the American Medical Association; fellow of the American College of Physicians; past president of the Florida Medical Association; formerly mayor of Tallahassee; served during the World War; for many years chief physician at the Florida State College for Women; aged 61; died, February 18.

David William Tovey, New York; Bellevue Hospital Medical College, New York, 1898; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons; fellow of the American College of Surgeons; clinical professor of gynecology and obstetrics, New York Polyclinic Medical School and Hospital; aged 64; died, February 12, in the Welfare Hospital of carcinoma of the thumb with metastases to the axilla and lungs.

John Stewart Hagen ✦ Cincinnati; Eclectic Medical Institute, Cincinnati, 1898; member of the Ohio State Medical Association; formerly professor of surgical gynecology at his alma mater; served during the World War; member of the Ohio State Medical Board from 1930 to 1933; at one time chief milk inspector; formerly police and fire surgeon; on the staff of the Bethesda Hospital; aged 64; died, March 5.

William Milton Dodson ✦ Woodsboro, Texas; University of Texas School of Medicine, Galveston, 1913; past president of the San Patricio-Aransas-Refugio Counties Medical Society; county health officer; on the staff of the Refugio County Hospital, Refugio; at one time mayor; formerly bank president; past president of the local school board; aged 52; died, February 2, of heart disease.

William John Benner, Anna, Ill.; Washington University School of Medicine, St. Louis, 1903; member of the Illinois State Medical Society; served during the World War; past president and secretary of the Union County Medical Society, and the Southern Illinois Medical Association; formerly member of the school board and city council; aged 64; died, March 3, of brain tumor.

Fleetwood Gruver, Tampa, Fla.; University of Nashville (Tenn.) Medical Department, 1897; formerly associated with the United States Public Health Service as medical officer in charge of the U. S. Quarantine Station; served during the World War; aged 69; died, February 28, in the Veterans Administration Facility, Bay Pines, of chronic gastric ulcer with hemorrhage.

Jesse Lee Weldon, Lanett, Ala.; Birmingham Medical College, 1911; member of the Medical Association of the State of Alabama; past president of the Chambers County Medical Society; formerly member of the board of education; member of the city council; aged 56; died, February 28, in a hospital in Atlanta, Ga., of aortic aneurysm, hypertension and arteriosclerosis.

Albert Summerfield Welch ✦ Kansas City, Mo.; Rush Medical College, Chicago, 1923; associate in medicine at the University of Kansas School of Medicine, Kansas City, Kan.; formerly pathologist at the Kansas City General Hospital; at one time editor of the *Jackson County Medical Bulletin*; author of "Clinical Interpretation of Laboratory Reports"; aged 43; died, February 7, of encephalitis and bilateral pneumonia.

Edwin C. McMillan, Hudson, Iowa; Hahnemann Medical College and Hospital, Chicago, 1903; member of the Iowa State Medical Society; past president of the Black Hawk County Medical Society; formerly county coroner; veteran of the Spanish-American War; at one time member of the board of education; aged 63; died, February 5, of coronary occlusion.

John Calvin Dye ✦ Lieutenant Colonel, U. S. Army, retired, Fayetteville, N. C.; North Carolina Medical College, Davidson, 1905; served during the World War; entered the regular army as a captain in 1920 and was retired in 1937 with rank of lieutenant colonel for disability in line of duty; aged 56; died, March 13, of cirrhosis of the liver.

William George Cassels, Washington, D. C.; Louisville (Ky.) Medical College, 1894; served during the World War; served the Veterans Administration Facility at Oteen, N. C., as chief medical officer and at Hines, Ill.; was chief medical officer of the board of appeals in the Veterans Administration; aged 74; died, March 5, of coronary thrombosis.

George Simeon Brock, London, Ky.; Tennessee Medical College, Knoxville, 1894; University of Louisville Medical Department, 1896; member of the Kentucky State Medical Association; past president of the Laurel County Medical Society; served during the World War; formerly county health officer; aged 67; died, March 6, of coronary occlusion.

Clarence Le Fevre Vreeland, Pompton Lakes, N. J.; Columbia University College of Physicians and Surgeons, New York, 1900; member of the Medical Society of New Jersey; served during the World War; physician of the schools of Pompton Lakes; aged 63; died, February 21, of chronic myocarditis and passive congestion of the lungs.

Alfred Wyckoff Ward, Demarest, N. J.; Long Island College Hospital, Brooklyn, 1901; member of the Medical Society of New Jersey; fellow of the American College of Surgeons; past president of the Bergen County Medical Society; on the staff of the Englewood (N. J.) Hospital; aged 62; died, February 8, of coronary thrombosis.

Frank Newton Loomis, Derby, Conn.; Yale College Medical Department, New Haven, Conn., 1883; member of the Connecticut State Medical Society; past president of the New Haven County Medical Society; on the consulting staff of the Bridgeport (Conn.) Hospital and the Griffin Hospital; aged 82; died, February 3.

Benjamin Pincus Seltzer ✦ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1924; assistant in clinical otolaryngology at the Woman's Medical College of Pennsylvania; member of the bureau of health; on the staff of St. Luke's and Children's Hospital; aged 42; died, February 16, of coronary thrombosis.

Benjamin Lawrence Casey, Toronto, Ohio; Ohio State University College of Medicine, Columbus, 1914; member of the Ohio State Medical Association; president of the Jefferson County Medical Society; served during the World War; aged 49; died, March 8, in the Ohio Valley Hospital, Wheeling, W. Va., of heart disease.

Corydon Mott Ryno, Benton Harbor, Mich.; Yale University School of Medicine, New Haven, Conn., 1901; served during the World War; formerly mayor, member of the board of health and board of education; aged 65; on the staff of the Mercy Hospital, where he died, February 6, of hepatitis and organic heart disease.

John Thomas Gillson, Paterson, N. J.; Bellevue Hospital Medical College, New York, 1888; member of the Medical Society of New Jersey; past president of the Passaic County Medical Society; on the staff of the Nathan and Miriam Barnert Memorial Hospital; aged 77; died, March 23, of carcinoma of the liver.

Wayne Jason Atwell ✦ Buffalo; University of Buffalo School of Medicine, 1934; professor of anatomy at his alma

mater; member of the American Association of Anatomists; aged 51; died, March 27, in the Buffalo General Hospital of multiple myeloma, metastatic calcification of the kidneys and bronchopneumonia.

Adelbert Bertel Maxwell, Ames, Iowa; Chicago Homeopathic Medical College, 1901; Hahnemann Medical College and Hospital, Chicago, 1905; past president of the Story County Medical Society; served during the World War; formerly member of the school board; aged 78; died, February 15, of cerebral hemorrhage.

Charles Andrew Erdmann, Minneapolis; University of Minnesota College of Medicine and Surgery, Minneapolis, 1893; member of the Minnesota State Medical Association; associate professor emeritus of anatomy at his alma mater; aged 74; died, February 19, in Rochester, Minn., of bronchopneumonia and arteriosclerosis.

Henning Koford ✦ Oakland, Calif.; University of California Medical Department, San Francisco, 1904; fellow of the American College of Surgeons; on the staff of the Samuel Merritt Hospital; aged 60; died, February 15, in St. Patrick Hospital, Lake Charles, La., of cerebral hemorrhage and coronary heart disease.

Henry Edmund Vitou, South Bend, Ind.; American Eclectic Medical College, Cincinnati, 1895; member of the Indiana State Medical Association; formerly county health officer and for many years a member of the city board of health; aged 74; died, February 28, in the Epworth Hospital of pneumonia.

Harry Orville Jones, Berne, Ind.; American College of Medicine and Surgery, Chicago, 1905; member of the Indiana State Medical Association; formerly member of the board of education; served during the World War; aged 59; died, February 22, in the Lutheran Hospital, Fort Wayne, of cerebral hemorrhage.

Samuel L. Caldbick ✦ Everett, Wash.; Saginaw (Mich.) Valley Medical College, 1902; member of the Pacific Coast Surgical Association; fellow of the American College of Surgeons; member of the visiting staff, General and Providence hospitals; aged 63; died, February 9, of coronary occlusion.

Charles Otis Hook, Fort Worth, Texas; Hahnemann Medical College and Hospital, Chicago, 1903; Bennett College of Eclectic Medicine and Surgery, Chicago, 1913; member of the State Medical Association of Texas; aged 64; died, February 15, in the All Saints Hospital of chronic myocarditis.

Albert Faller ✦ Cincinnati; St. Louis University School of Medicine, 1902; professor emeritus of contagious diseases at the University of Cincinnati College of Medicine; served during the World War; aged 66; on the staff of the Jewish Hospital, where he died, March 8, of coronary sclerosis.

George Thayer Cass, Danville, Ill.; Chicago College of Medicine and Surgery, 1907; member of the Illinois State Medical Society; past president and secretary of the Vermilion County Medical Society; formerly health officer; aged 69; died, March 12, in St. Elizabeth Hospital of pneumonia.

Henry H. Brevoort ✦ Lodi, N. J.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1900; for many years medical inspector and school physician; on the staff of the Hackensack (N. J.) Hospital; aged 67; died, March 18, of cerebral embolism and mitral stenosis.

Herbert Wright Wootton, Old Lyme, Conn.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1888; formerly on the staff of the Manhattan Eye, Ear and Throat Hospital, New York; aged 73; died, February 28, of arteriosclerosis and uremia.

Robert Crawford Brown ✦ Lancaster, S. C.; Medical College of Virginia, Richmond, 1901; president of the Lancaster County Medical Society; served during the World War; on the staff of the Marion Sims Memorial Hospital; aged 62; died, February 24, of coronary thrombosis.

Joseph Schwartz, New York; Long Island College Hospital, Brooklyn, 1919; member of the Medical Society of the State of New York; fellow of the American College of Surgeons; on the staff of the Lebanon Hospital; aged 45; died, February 5, of carcinoma of the stomach.

Alvin De Witt Wadsworth, South Norwalk, Conn.; Hahnemann Medical College and Hospital of Philadelphia, 1900; medical director and superintendent of a sanitarium bearing his name; aged 64; died, February 2, of cerebral hemorrhage, chronic nephritis and hypertension.

William Wallace Wadsworth, Muncie, Ind.; Medical College of Ohio, Cincinnati, 1897; member of the Indiana State Medical Association; past president of the Delaware-Blackford Counties Medical Society; aged 77; died, February 23, of cerebral hemorrhage and arteriosclerosis.

Obie Byron Walker, Bowman, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1893; Kansas City (Mo.) College of Medicine and Surgery, 1916; for many years a member of the state board of medical examiners; aged 67; died, February 3, of chronic nephritis.

Morris Sigmund Shuman ✦ Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1938; on the staff of St. Luke's and Children's Hospital; aged 30; died, February 12, in the Eagleville (Pa.) Sanatorium for Consumptives of pulmonary tuberculosis.

Edward Field Hamm, Clarendon, Texas; Hospital College of Medicine, Louisville, Ky., 1905; member of the State Medical Association of Texas; past president and secretary of the Limestone County Medical Society; aged 65; died, February 15, of coronary occlusion.

Harry Martyn Voorhees ✦ Los Angeles; University of Southern California College of Medicine, Los Angeles, 1905; on the staffs of the California, Good Samaritan, Cedars of Lebanon and Queen of the Angels hospitals; aged 64; died, February 2, of kidney disease.

Richard Ambrose Outerson, Hartford, Conn.; Jefferson Medical College of Philadelphia, 1902; member of the Connecticut State Medical Society; aged 62; on the staff of St. Francis Hospital, where he died, February 5, of cerebral thrombosis and hypertension.

Robert G. Sharp ✦ San Diego, Calif.; Johns Hopkins University School of Medicine, Baltimore, 1917; member of the American Academy of Pediatrics; on the staffs of the Mercy and San Diego General hospitals; aged 58; died, February 21, of carcinoma.

Paul Henry Hannen ✦ Milwaukee; Rheinische Friedrich-Wilhelms-Universität Medizinische Fakultät, Bonn, Prussia, 1920; served during the World War; on the associate staff of the Evangelical Deaconess Hospital; aged 48; died, March 5, of coronary occlusion.

Charles Augustus Dodson, Palmyra, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; aged 64; died, February 24, in the Deaconess Hospital, Milwaukee, of malignant hypertension and lobar pneumonia.

Ollie P. Clark, Winchester, Ky.; Kentucky School of Medicine, Louisville, 1901; member of the Kentucky State Medical Association; past president and secretary of the Clark County Medical Society; aged 66; died, February 23, of cirrhosis of the liver.

Amuel B. Spach, Kenilworth, Ill.; Chicago Homeopathic Medical College, 1886; College of Physicians and Surgeons of Chicago, 1893; member of the Illinois State Medical Society; aged 83; died, February 11, of coronary thrombosis and arteriosclerosis.

George Emmett Martin, Robstown, Texas; University of Texas School of Medicine, Galveston, 1925; member of the State Medical Association of Texas; aged 41; died, February 11, in the Robstown-Clinic Hospital of embolism following an appendectomy.

Morris Mott Sweeney ✦ New York; Columbia University College of Physicians and Surgeons, New York, 1910; on the staffs of the Misericordia Hospital, St. Elizabeth's Hospital and St. Clare's Hospital; aged 60; died, February 23, of coronary occlusion.

James Allen Turner, Nashville, Ind.; Medical College of Indiana, Indianapolis, 1898; past president of the state board of health; served during the World War; aged 65; died, February 19, in the Veterans Administration Facility, Indianapolis, of pneumonia.

George Washington Kimball ✦ La Porte, Ind.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1902; served during the World War; aged 68; died, February 23, of heart disease and pernicious anemia.

Edward Eugene Ledbetter ✦ Tioga, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1899; veteran of the Spanish-American War; aged 64; died, February 22, in the Methodist Hospital, Dallas, of coronary occlusion.

Charles E. Francis, Bowling Green, Ky.; Kentucky University Medical Department, Louisville, 1906; member of the Kentucky State Medical Association; county coroner; aged 59; died, February 24, of cerebral hemorrhage.

Ross Howard Thompson ✦ Philadelphia; Medico-Chirurgical College of Philadelphia, 1911; member of the American Neurological Association; aged 55; died, February 11, in the Methodist Hospital of bronchopneumonia.

Marian Elizabeth Fischer, Buffalo; Woman's Medical College of Pennsylvania, Philadelphia, 1934; member of the Medical Society of the State of New York; aged 42; died, February 20, of pulmonary tuberculosis.

Harry Feagles, Chehalis, Wash.; Tennessee Medical College, Knoxville, 1909; member of the Washington State Medical Association; at one time mayor of Morton; aged 64; died, March 12, of coronary occlusion.

Joseph F. Crouthamel, Souderton, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1899; aged 66; died, February 23, in the Grand View Hospital, Sellersville, of carcinoma of the head of the pancreas.

Lewis C. Bean ✦ Gallipolis, Ohio; Starling Medical College, Columbus, 1892; bank president; formerly acting assistant surgeon, United States Public Health Service; aged 74; died, March 19, of cerebral hemorrhage.

Rolland Frederick Hastreiter, Los Angeles; Johns Hopkins University School of Medicine, Baltimore, 1901; member of the American Society of Anesthetists; aged 65; died, February 28, of cerebral hemorrhage.

James Eli Hayes Taylor, Washington, D. C.; Howard University College of Medicine, Washington, 1909; aged 63; died, February 5, in the Freedmen's Hospital of cardiorenal disease with cerebral hemorrhage.

Edwin Bouldin Fenby, Baltimore; University of Maryland School of Medicine, Baltimore, 1878; member of the Medical and Chirurgical Faculty of Maryland; aged 88; died, March 8, of chronic myocarditis.

Thomas Demosthenes Rice, Tigrett, Tenn.; University of Nashville Medical Department, 1894; Vanderbilt University School of Medicine, Nashville, 1894; aged 68; died, February 4, of chronic nephritis and uremia.

Thomas M. Morgan, Childress, Texas; University of Tennessee Medical Department, Nashville, 1900; member of the Tennessee State Medical Association; aged 68; died, February 10, of cerebral hemorrhage.

Percival Lemon Clark, Chicago; Bennett College of Eclectic Medicine and Surgery, Chicago, 1889; aged 74; died, February 2, in Oklahoma City of myocarditis following an operation on the prostate.

Charles Ebenezer Moore, Wilson, N. C.; Bellevue Hospital Medical College, New York, 1875; member of the Medical Society of the State of North Carolina; aged 86; died, February 12, of pneumonia.

Stuart John Fairbank, West Winfield, N. Y.; Hahnemann Medical College and Hospital of Philadelphia, 1898; for many years member of the school board; aged 65; died, March 18, of coronary thrombosis.

James Johnson Haviland ✦ Owosso, Mich.; Detroit College of Medicine, 1894; served during the World War; aged 71; died, March 22, in a hospital at Ann Arbor of cerebral hemorrhage.

Earl Stanley Haas ✦ Marathon, Ohio; Eclectic Medical Institute, Cincinnati, 1909; aged 54; died, February 17, in the Bethesda Hospital, Cincinnati, of coronary artery disease with myocardial failure.

William Thomas Braun ✦ Memphis, Tenn.; Memphis Hospital Medical College, 1898; on the staffs of Methodist, Baptist and St. Joseph's hospitals; aged 64; died, March 7, of coronary occlusion.

William M. Gertman, St. Petersburg, Fla.; Atlanta (Ga.) College of Physicians and Surgeons, 1907; aged 56; died, February 26, in the Veterans Administration Facility, Bay Pines, of bronchopneumonia.

Truman Arthur Penney, Tulsa, Okla.; St. Louis College of Physicians and Surgeons, 1906; also a druggist; formerly mayor; aged 67; died, February 20, of arteriosclerosis and diabetes mellitus.

Ransom Sanford Moscrip, Whitney Point, N. Y.; Albany Medical College, 1899; member of the Medical Society of the State of New York; county coroner; aged 66; died, February 9, of leukemia.

Alvin Thomas Neal, Steffenville, Mo.; Hospital College of Medicine, Louisville, Ky., 1896; aged 72; died, February 25, in the Blessing Hospital, Quincy, of carcinoma of the antrum.

A. B. Campbell, Denver; Louisville (Ky.) Medical College, 1894; formerly member of the state legislature of West Virginia; aged 73; died, March 23, of carcinoma of the prostate.

George Freeman Bush, Ramseur, N. C.; Atlanta (Ga.) College of Physicians and Surgeons, 1900; aged 68; died, February 20, of hypertensive cardiac disease and chronic nephritis.

Edson Almeron Freeman ✦ Akron, Ohio; Rush Medical College, Chicago, 1914; aged 54; on the staff of the City Hospital, where he died, March 13, of carcinoma of the colon.

Charles Mernitz, Tivoli, Texas; University of Louisville (Ky.) Medical Department, 1905; aged 61; died, February 24, in the Refugio County Hospital, Refugio, of carcinomatosis.

John H. Mowers, Rochester, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1892; aged 80; died, February 16, of arteriosclerotic myocarditis.

Henry Herbert Darnall, Fulton, Ark. (licensed in Arkansas in 1903); member of the Arkansas Medical Society; aged 61; died, February 11, of a self-inflicted gunshot wound.

Joseph M. Brockerhoff, Bellefonte, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1882; aged 82; died, March 5, of arteriosclerosis and myocarditis.

Frank E. Goldstein, Syracuse, N. Y.; Syracuse University College of Medicine, 1912; aged 49; died, February 20, in the Crouse-Irving Hospital of coronary thrombosis.

John Bishop Hazel, Saybrook, Ill.; Hospital College of Medicine, Louisville, Ky., 1906; served during the World War; aged 60; died, March 25, of cerebral hemorrhage.

John Adolphus Blakeney, Smithfield, Va.; Meharry Medical College, Nashville, Tenn., 1923; aged 52; died, February 24, of injuries received in an automobile accident.

Gilbert Hamilton Henry, El Dara, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1893; aged 79; died, February 24, of diabetes mellitus and arteriosclerosis.

Hazlett Austin Delcher, Toledo, Ohio; University of Maryland School of Medicine, Baltimore, 1907; aged 56; died, March 3, in the Toledo Hospital of pneumonia.

Peter Brickbauer, St. Louis; Homeopathic Medical College of Missouri, St. Louis, 1895; aged 68; died, February 23, of uremia, chronic nephritis and arteriosclerosis.

Luther A. Chanslor, Killeen, Texas (licensed in Texas under the Act of 1907); aged 62; died, March 19, in a hospital at Temple of pneumonia and chronic nephritis.

Ward Woodbridge, Central City, Iowa; Rush Medical College, Chicago, 1881; member of the Iowa State Medical Society; aged 92; died, February 4, of senility.

Axel Kassemir Hildebrand Sundin, North Providence, R. I.; College of Physicians and Surgeons, Boston, 1906; aged 60; died, January 25, of cerebral hemorrhage.

Alfred Ernest Baxter, Lowell, Mass.; Tufts College Medical School, Boston, 1908; aged 64; died, March 7, in St. John's Hospital of chronic myocarditis.

George Alexander Gordon, Hamilton, Mont.; Detroit College of Medicine, 1901; formerly health officer; aged 64; died, February 24, of cerebral hemorrhage.

William A. Heartsill, Weatherford, Texas; Nashville (Tenn.) Medical College, 1878; aged 88; died, March 5, of senility.

Sheffie R. May ✦ Mount Zion, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1880; aged 81; died in February.

Charles M. Hammer, Johnstown, Pa.; Jefferson Medical College of Philadelphia, 1909; aged 66; died, February 21.

William M. O'Brien ✦ Greencastle, Ind.; Kentucky School of Medicine, Louisville, 1892; aged 71; died, February 15.

John Sidney Eason, Verona, Miss.; Memphis (Tenn.) Hospital Medical College, 1908; aged 56; died, March 3.

James Richard English ✦ New York; Long Island College Hospital, Brooklyn, 1892; aged 73; died, March 3.

Francis George Gunn, Kelseyville, Calif.; Cooper Medical College, San Francisco, 1900; aged 69; died, March 1.

Benjamin F. Brayfield, Christopher, Ill.; Kentucky School of Medicine, Louisville, 1892; aged 79; died, March 5.

Lester C. Hanna ✦ Houston, Texas (licensed in Texas under the Act of 1907); aged 61; died, March 14.

Flavian P. Au Buchon, Forest, Ind.; Barnes Medical College, St. Louis, 1898; aged 66; died, March 17.

Correspondence

THIAMINE OVERDOSAGE AND TOXICITY

To the Editor:—The use of thiamine hydrochloride, through both lay and medical channels, has reached large proportions. With inferential evidence only regarding human requirements for the maintenance of good health, and without any published evidence of toxicity, the tendency has been toward an intake well above established deficiency levels. Williams and his associates (Williams, R. D.; Mason, H. L.; Wilder, R. M., and Smith, B. F.: Observations on Induced Thiamine Deficiency in Man, *Arch. Int. Med.* **66**:785 [Oct.] 1940) showed that definite deficiency symptoms would develop in otherwise normal adults kept on a daily intake of 0.15 mg. for several months, while it is generally presumed that 2 to 3 mg. daily will cover the normal adult needs in health. Little evidence has been presented, however, to show just how much the daily intake need be increased in patients suffering from long-standing deficiency. Here again the tendency has been toward the use of large doses, with a daily intake many times the normal requirement. Such therapy can reasonably be based only on a clearly established nontoxicity and on evidence that such excessive dosage carries therapeutic benefits not obtained by dosages down nearer the normal requirement. Neither of these bases has yet been satisfactorily established by published data.

In August 1940 I observed an onset of definite toxicity in a Cincinnati woman aged 47 who had been taking 10 Gm. of thiamine hydrochloride daily for two and one-half weeks. The symptoms resembled those of overdosage with thyroid extract—headache, increased irritability, insomnia, rapid pulse, weakness and trembling—and cleared up within two days after administration of thiamine hydrochloride was discontinued. After one week's rest the patient began taking 5 mg. of thiamine hydrochloride daily and after four and one-half weeks at this intake level the same toxic syndrome recurred. Prompt relief again followed cessation of the intake of thiamine hydrochloride.

During a recent visit to Panama, I observed other patients with thiamine toxicity. Liberal doses (20 to 40 mg. of thiamine hydrochloride daily) are often prescribed by physicians in tropical climates in an effort to overcome the physical letdown which so commonly afflicts persons migrating there from cooler regions. One young woman, receiving an average of 17 mg. daily, was excreting 12 mg. daily in her urine and passing stools smelling strongly of thiamine hydrochloride. She was showing symptoms similar to those of thyroid hyperactivity, with fine and coarse muscle tremor, rapid pulse and noticeable nervous hyperirritability. Several other similar cases of toxicity were reported to me after attention had been drawn to the type of toxic symptoms one might expect from overdosage. Cessation of the administration of thiamine hydrochloride was followed in each such case by prompt subsidence of the hyperthyroid-like symptoms. A detailed report of a series of these instances of overdosage will soon be offered for publication by Dr. F. A. Raymond of the Panama Hospital.

Just why no reports of thiamine toxicity have appeared in medical literature is difficult to understand, for the vitamin has been widely used at daily intake levels of 10 to 50 mg. in treatment of deficiency states. Prevalence of toxic reactions in the tropics (or in Cincinnati's August heat) may be related to more widespread multiple deficiencies for the B vitamins at the high environmental temperatures. In cases of multiple deficiency it has been shown that unfavorable results may attend administration of a single one of the lacking elements (Morgan, Agnes Fay: The Effect of Imbalance in the Filtrate Fraction of the Vitamin B Complex in Dogs, *Science* **93**:261 [March 14] 1941). Studies on rats in my laboratory (Mills, C. A.: Environmental Temperatures and Thiamine Requirements, *Am. J. Physiol.*, to be published) have shown thiamine (and pantothenic acid) requirements per gram of food to be decidedly higher for animals kept at 90 F. than at 65 F. environmental temperature level. It may perhaps be the greater prevalence of multiple deficiency in regions of tropical heat that has led to the unfavorable results of high thiamine dosage in Panama. Lower requirement per gram of food in temperate zone coolness may have prevented similar evidences of unfavorable reactions from appearing at more northern latitudes.

Recognition of symptoms of overdosage at once necessitates more adequate information as to actual thiamine needs under various conditions. Such information can be obtained only by blood level and excretion rate studies. Addition of thiamine hydrochloride to bread and other commonly used foods, without control over the intake level, also carries a potentiality of harm. This is particularly true in those stimulating middle temperate regions where hyperthyroidism and other forms of metabolic disturbance are already prone to occur. The medical profession should recognize the need for greater conservatism in the use of this important vitamin, and its distribution through both nonmedical and medical channels should be placed on a more scientific and controlled basis.

CLARENCE A. MILLS, M.D., Cincinnati.
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THE RECORD OF A BLOOD DONOR

To the Editor: — The editorial "The Record of a Blood Donor" that appeared in the February 1 issue of THE JOURNAL concerns a subject of more than passing interest to me. As one of the physicians who attended Rose Marie Ryan (the niece of Mrs. McMullin) I am acquainted with the intimate details of the early use of Mrs. McMullin as a donor. We have watched the rising tide of publicity about the "golden blood" of Mrs. McMullin with amazement at the credulity of the public and many of our profession. I am sure that you, and the medical profession in general, would be interested in some early details of this affair.

Correlation of Critical Features

Date, 1935	Temperature, F.		Blood Culture		Transfusions	
	Maximum	Minimum	Blood	Colonies per Cc.	Amount, Cc.	Donor
8/ 8	103.6	102.8	+	264	...	.....
8/11	105.0	103.6	+	...	...	.....
8/13	104.4	102.6	..	...	200	Father
8/14	104.4	102.8	..	...	150	Father
8/16*	104.2	102.0	+	34	*150	Aunt
8/17	103.8	101.0	..	..	150	Aunt
8/19	104.0	100.4	..	..	150	Aunt
8/21	104.0	100.6	+	4	130	Aunt
8/23	103.4	101.0	..	..	135	Father
8/26	103.4	100.2	..	..	120	Father
8/30	102.0	99.4	+	2	125	Aunt
9/ 1	101.2	99.4	..	..	130	Father
9/ 3	102.2	99.4	..	..	130	Father
9/ 5	103.4	101.0	..	..	130	Aunt
9/ 9	104.2	101.2	+	8	140	Father
9/10	103.8	98.0	..	..	100	Father
			Serum and Plasma			
9/11	103.4	99.6	.....		50	Father
9/12	104.0	102.4	.....		50	Father
9/13	103.8	101.4	Sterile		60	Father
9/20	101.2	99.4	.....		60	Aunt
9/21	101.2	99.2	Sterile		75	Aunt
9/24	101.0	100.0	.....		60	Father
9/26	99.6	99.0	.....		50	Father
9/28	Transfusion reaction		.....		90	Aunt
10/ 4	99.8	98.4	Sterile			
10/ 9	99.6	98.0	Patient left hospital			

* On 8/15 injection of donors with Staphylococcus aureus vaccine strain Ryan was started.

Rose Marie Ryan, aged 3 years, had a superficial infection (pustule) on the right knee which progressed in severity despite conservative local therapy. Five days later, with a high fever (104 F. axillary), localized pain in the back and stiffness of the neck muscles and irritability suggesting meningitis, she was sent to Hahnemann Hospital on Aug. 8, 1935, under the care of her family physician, Dr. Maxwell White. The clinical signs suggesting meningitis were denied by a negative spinal fluid, but a blood culture taken that day contained 364 colonies of Staphylococcus aureus per cubic centimeter. The first of a series of somatic abscesses to be drained by Dr. A. B. Webster was located in the muscles of the interscapular region; this was opened on August 12 and from it Staphylococcus aureus was also cultured. Positive blood cultures repeatedly confirmed the original diagnosis of staphylococcic septicemia with multiple abscess formation. The patient was critically ill, with signs of an active septicemia, for five weeks. During this time she received many blood transfusions, and numerous somatic abscesses were opened and drained. When the original diagnosis of septicemia was made it was decided that we would give the patient multiple transfusions with epinephrine leukocytosis reenforcement until immune donors could be prepared.

It was definitely at our suggestion and after repeated requests of all members of the patient's family that Mrs. McMullin submitted to injections of a vaccine. This vaccine, prepared from Staphylococcus aureus obtained from the blood of Rose Marie Ryan, was heat killed (56 C. for one hour) and proved to be sterile before use. Subcutaneous injections of this vaccine were given to Mrs. McMullin every four days, and she was coincidentally used as a donor for repeated transfusions. In all, nine transfusions of Mrs. McMullin's blood totaling 835 cc. of blood and 225 cc. of serum or plasma were given from August 16 to September 28. When the vaccine injections were started, Mrs. McMullin's blood contained no demonstrable agglutinins against the staphylococcus; on September 5, twenty-one days after the first injection, the agglutinin titer was 1/8.

Mrs. McMullin was not the only immune donor used in this case; the patient's father was similarly injected with Rose Marie's staphylococcus vaccine. Over the period of August 23 to September 24 he submitted to eleven transfusions, with a total of 755 cc. of blood and 270 cc. of plasma or serum. On September 9 his agglutinin titer was 1/4. It is of interest to note that on September 11, after the patient's fourteenth transfusion, cyanosis developed from polycythemia, her red cell count being 7,270,000 per cubic millimeter; from this time on all transfusions were of plasma or serum.

It is difficult to assay the value of the immunotransfusions in this case. When the case was reviewed prior to a staff presentation on Nov. 12, 1935 it was our opinion that recovery must be credited to a number of factors, which would include the patient's resistance, immunotransfusions, surgical drainage of the metastatic abscesses and general medical care. A correlation of the critical features is given in the accompanying table.

The patient was taken home on October 11 nearly afebrile. Her recovery was complete and she was known to be alive a short time ago.

Knowing that the increasing publicity about Mrs. McMullin stemmed from the recovery of Rose Marie Ryan, I felt that in some measure it was my responsibilty to give publicity to the facts of the case as stated here. Her blood can only partially and jointly (with Mr. Ryan's) share the credit for the recovery of a patient with staphylococcic septicemia in 1935. She was never inoculated with live bacteria and received only a heat-killed vaccine. She was never inoculated with a streptococcus organism by me, and I in no way used her blood for or against any leukemic condition.

On numerous occasions I have been asked for my opinion about the value of Mrs. McMullin's blood. These requests have usually been by telephone from physicians and relatives, not infrequently some distance away, such as South Carolina. A good example is contained in the following telegram, dated January 20, from Alma Hickman, Soaper Hotel, Henderson, Ky.: "Please give me the address of Mrs. Rose McMullin, blood donor, and tell me if she can help leukemia cases; answer collect." In response I wired "Mrs. McMullin's blood of no value in leukemia." A number of inquiries have come to the hospital and have been answered through the medical director; a copy of this correspondence is available and consists of repetitious denials of the value of Mrs. McMullin's blood in leukemia.

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MEDICAL FAMILIES

To the Editor:—I am enclosing a record of a medical family which I think rather interesting.

Grandfather:	Adam L. Titterington M.D. Born 1789
Great Uncle:	Joseph Titterington M.D. 10-23-1813
Uncles:	Richard Titterington M.D. 11-6-1819 Cousins: James Titterington M.D.
	James Titterington M.D. 2-19-1824 (1) Cousins: Lee Titterington, M.D. D.D.S. (2) Clyde Titterington, D.D.S. (3) James Titterington, D.D.S.
	John Q. Titterington M.D. 5-3-1826 Cousins: Jesse Titterington M.D. Robert Titterington M.D.
	Daniel Titterington 5-15-1828 Cousins: James Titterington M.D. Jesse M. Titterington M.D.
Father:	Alfred Titterington M.D. 7-7-1834 Richard M. Titterington D.D.S. (Informant)

I am staying at the home of the last name, Dr. Richard M. Titterington, who supplied me with these facts.

JAMES P. SHARON, M.D., Fort Leonard Wood, Mo.

Medical Examinations and Licensure

COMING EXAMINATIONS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, April 26, page 1984.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various centers, June 23-25. Part III. Various centers, June or July. Exec. Sec., Mr. Everett S. Elwood, 225 S. 15th St., Philadelphia.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY AND SYPHILOLOGY: *Written.* Nov. 3. Final date for filing application is Sept. 23. *Oral.* Dec. 12-13. Final date for filing application is Nov. 8. Sec., Dr. C. Guy Lane, 416 Marlboro St., Boston.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* June, in advance of the meeting of the American Medical Association. *Written.* Oct. 20. Final date for filing application is Sept. 1. Sec., Dr. William S. Middleton, 1301 University Ave., Madison, Wis.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Philadelphia, June 6-7. Sec., Dr. R. Glen Spurling, 404 Brown Bldg., Louisville, Ky.

AMERICAN BOARD OF OPHTHALMOLOGY: *Oral.* New York, June 2; Portland, July 15; Chicago, Oct. 18. *Written.* March 7, 1942. Sec., Dr. John Green, 6830 Waterman Ave., St. Louis.

AMERICAN BOARD OF ORTHOPAEDIC SURGERY: Washington, January. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 1640 State St., New Orleans, La.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Chicago, May 18, following the Region III meeting of the American Academy of Pediatrics. Boston, Oct. 7-8, immediately following the annual meeting of the American Academy of Pediatrics. *Written.* Locally, Aug. 22. Sec., Dr. C. A. Aldrich, 707 Fullerton Ave., Chicago.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Medical Practice Acts: Right of Unlicensed Chiropractor to Question Constitutionality of Act.—The healing arts practice act of Virginia (Michie's Code of Virginia, 1936, Chapter 68, Section 1608 et seq.) regulates "the practice of medicine in all of its branches" by creating a board of medical examiners with authority to issue certificates to persons who have met certain prescribed educational requirements and passed the required examination. Section 1612 requires that licensees to practice medicine, homeopathy, osteopathy, chiropractic or chiropody must register their certificates with the clerk of the circuit court of the county or the corporation court of the city in which such practice is to be carried on. The defendant chiropractor was prosecuted for unlawfully practicing "chiropractic and medicine" without a license. The evidence showed not only that the defendant had failed to file a certificate with the clerk of the corporation court of the city of Staunton but that in fact he had never been granted such a certificate by the board of medical examiners. The evidence showed, too, that the defendant had maintained an office in Staunton for almost a year, that he had employed a stenographer in the office, that he had his name on the doors and windows and that people went in and out of the office. The defendant listed his name in the city telephone directory as: "Grosso, Charles S., Chiropractor, Witz Building." The evidence also showed that a few months before the trial the defendant had caused an advertisement to be published in the Staunton papers which lauded chiropractic "as a cure for backaches, constipation, rash and other ills" and offered "free" "spinal analysis and consultation." The advertisement also stated the telephone number, office hours and address of the defendant's place of business. One Whisman, a witness for the commonwealth, testified that he had visited the defendant's office and had received a roentgen examination and a treatment for which he paid the defendant $16.50. The defendant did not testify in his own behalf. He was found guilty and so he appealed to the Supreme Court of Appeals of Virginia.

Section 1615 of the Virginia healing arts practice act, said the Supreme Court of Appeals, provides that an applicant for a certificate to "practice medicine, homeopathy, osteopathy, and chiropractic" must show that he or she "Has studied medicine not less than four school years, including four satisfactory courses of at least eight months each in four different calendar years in a medical school registered as maintaining a standard, satisfactory to the state board of education. Such standard being based upon the grading of the American Medical Association, of the American Institute of Homeopathy, and of the American Osteopathic Association, respectively." The defendant first contended that this section is unconstitutional because it discriminates against a candidate for a license to practice chiropractic, in violation of the due process and equal protection clauses of the federal constitution and the due process clause of the state constitution. He argued that under the act a candidate for license to practice medicine, homeopathy or osteopathy was required to show graduation from a school conforming to standards prescribed by his particular branch of the healing art but that no like standard was prescribed for chiropractors, and that consequently a chiropractor had to qualify himself by taking a course in a school approved by one of the branches of the healing art other than chiropractic. The court said, however, that even if section 1615 is discriminatory the defendant was in no position to raise that question. He produced no evidence to show that he had been denied the right to take an examination because of the lack of recognition of a chiropractic school. Nor did the defendant show that he had pursued his studies in such a school, or in any other school. In holding that the defendant's rights had been in no way prejudiced, the court said:

> It is well settled that one challenging the constitutionality of a provision in a statute has the burden of showing that he himself has been injured thereby. It avails him nothing to point out that some other person might conceivably be discriminated against.

The defendant also raised objection to certain rulings of the trial court with reference to the admissibility of evidence and the granting or refusing of instructions. He contended that the trial court had erred in refusing to admit the testimony of a practicing chiropractor as to the definition of chiropractic and as to whether or not the defendant's acts constituted the practice of chiropractic. The Supreme Court of Appeals held, in substance, that the question was not whether the defendant was practicing chiropractic but whether he was violating the healing arts practice act. Indeed, said the court, it is conceivable that the acts done by an unlicensed practitioner might constitute the practice of two or more branches of the healing art. In the judgment of the court this testimony was, therefore, properly excluded. The defendant also contended that he should have been allowed to cross examine witness Whisman to show that the witness had visited the defendant at the direction of a local physician who was interested in the prosecution of the defendant. The court held that the defendant should have been given the opportunity requested because the testimony of the witness would have tended to show his credibility or prejudice. The defendant finally contended that he was entitled to an instruction on the presumption of innocence. Such an instruction had been refused by the trial court because of section 1614, which provides that on the trial of any person for practicing without complying with the act "the burden of proof shall be upon him to establish his right to practice." The Supreme Court of Appeals held that the commonwealth was required to prove that the defendant was (1) doing certain specified things and (2) doing them without authority, and section 1614 merely means that on proof of (1) the defendant has the burden of going on and showing that he was licensed to do those things. In the judgment of the court, the section does not deprive the defendant of the benefit of a presumption of innocence. The court concluded that the errors of the trial court were substantial rather than merely "technical" and that the cause should be remanded for a new trial. Judgment for the commonwealth was therefore reversed and a new trial ordered.—*Grosso v. Commonwealth, 13 S. E. (2d) 285 (Va., 1941).*

Malpractice: Hypodermic Needle Broken in Patient's Jaw; Doctrine of Res Ipsa Loquitur Not Applicable.—The plaintiff consulted the defendant dentist about a tooth that had been bothering her and was advised to have it extracted. Preparatory to the extraction the defendant broke off a hypodermic needle in the plaintiff's jaw. After unsuccessfully attempting to remove the needle he took the plaintiff to a dentist and two dental surgical specialists to have it removed, but their attempts even with the aid of roentgenograms were also unsuccessful. Subsequently the plaintiff brought suit against the defendant dentist to recover damages. She alleged that as the result of his negligence she had pains, a nervous condition, spots before her eyes and general poor health including loss of weight. From a judgment of the trial court in favor of the defendant, the plaintiff appealed to the appellate court of Indiana, in Banc.

The appellate court could not agree with the plaintiff's first contention that the defendant had been negligent in allowing the needle to remain in her jaw. The evidence introduced by the plaintiff, said the court, indicated clearly that the defendant's conduct after the needle had broken was exemplary. "He not only advised her as to the true condition but attempted in every way possible to have the needle removed." Likewise, the plaintiff's further contention that the defendant had been negligent in breaking off the needle in her jaw did not meet with the approval of the court. In the judgment of the court the doctrine of res ipsa loquitur was not applicable to the present case. In a malpractice case against a dentist or a physician the main issue as to whether or not the defendant used suitable professional skill is a topic calling for expert testimony, and a plaintiff cannot rest his or her case on the mere facts of suffering and rely on the jury's untutored sympathies with-

out attempting specifically to prove by evidence that the defendant's unskilfulness was the cause of that suffering. In the present case there was no evidence, either by lay witness or expert, that the conduct of the defendant, either before or after the needle was broken, was negligent or unskilful. In the absence of such evidence the court held that the plaintiff had not sustained the required burden of proof. Judgment for the defendant was therefore affirmed.—*Robinson v. Ferguson, 22 N. E. (2d) 901 (Ind., 1939).*

Occupational Disease Act (Indiana): Compensability of Bronchitis, Pharyngitis and Sinusitis.—The occupational disease act of Indiana defines an occupational disease as follows:

> As used in this act, the term "occupational disease" means a disease arising out of and in the course of the employment. Ordinary diseases of life to which the general public is exposed outside of the employment shall not be compensable, except where such diseases follow as an incident of an occupational disease as defined in this section.

The plaintiff had been employed for three weeks in the defendant's soldering department where he became exposed to dust and the fumes of hydrochloric acid (muriatic acid) used in cleaning the soldering irons. The medical testimony was in agreement that the plaintiff was suffering from bronchitis, pharyngitis and sinusitis and that such diseases were not singular or peculiar to his employment but were common to a person in the ordinary walks of life. The plaintiff's medical witness would not say that these diseases were caused by the plaintiff's employment but he testified that he believed that the acid fumes accelerated them. Two medical witnesses for the defendant testified that they saw no connection between the plaintiff's employment and his condition, but one of the witnesses testified that he thought that the plaintiff's sinusitis might have been accelerated temporarily by the acid fumes. The appellate court of Indiana, in Banc, held that the plaintiff was not suffering from an occupational disease within the meaning of the act, and so it affirmed the order of the industrial board denying compensation.—*Russell v. Auburn Central Mfg. Co., 22 N. E. (2d) 889 (Ind., 1939).*

Society Proceedings

COMING MEETINGS

American Medical Association, Cleveland, June 2-6. Dr. Olin West, 535 North Dearborn St., Chicago, Secretary.

American Association for the Study of Allergy, Cleveland, June 2-3. Dr. J. Harvey Black, 1405 Medical Arts Bldg., Dallas, Tex., Secretary.

American Association for the Study of Goiter, Boston, May 12-14. Dr. W. Blair Mosser, 133 Biddle St., Kane, Pa., Secretary.

American Association for the Surgery of Trauma, Montreal and Montebello, Canada, May 29-31. Dr. Ralph G. Carothers, 409 Broadway, Cincinnati, Secretary.

American Association for Thoracic Surgery, Toronto, Canada, June 9-11. Dr. Richard H. Meade Jr., 2116 Pine St., Philadelphia, Secretary.

American Association of Genito-Urinary Surgeons, Hot Springs, Va., May 29-31. Dr. Charles C. Higgins, 2020 East 93d St., Cleveland, Secretary.

American Association of Industrial Physicians and Surgeons, Pittsburgh, May 5-9. Dr. Volney S. Cheney, % Armour and Company, Union Stock Yards, Chicago, Secretary.

American Association of Medical Milk Commissions, Cleveland, June 1-2. Dr. Paul B. Cassidy, 2037 Pine St., Philadelphia, Secretary.

American Association of the History of Medicine, Atlantic City, N. J., May 4-6. Dr. Henry E. Sigerist, 1900 East Monument St., Baltimore, Secretary.

American Association on Mental Deficiency, Salt Lake City, June 20-24. Dr. E. Arthur Whitney, Washington Road, Elwyn, Pa., Secretary.

American Broncho-Esophagological Association, Cleveland, June 3. Dr. Paul H. Holinger, 1150 North State St., Chicago, Secretary.

American College of Chest Physicians, Cleveland, May 31-June 2. Dr. Paul H. Holinger, 500 North Dearborn St., Chicago, Secretary.

American Gastro-Enterological Association, Atlantic City, N. J., May 5-6. Dr. Thomas T. Mackie, 16 East 90th St., New York, Secretary.

American Gynecological Society, Colorado Springs, May 26-28. Dr. Richard W. TeLinde, Johns Hopkins Hospital, Baltimore, Secretary.

American Heart Association, Cleveland, May 30-31. Dr. Howard B. Sprague, 50 West 50th Street, New York, Secretary.

American Laryngological Association, Atlantic City, May 28-30. Dr. Charles J. Imperatori, 108 East 38th St., New York, Secretary.

American Laryngological, Rhinological and Otological Society, Los Angeles, June 16-18. Dr. C. Stewart Nash, 277 Alexander St., Rochester, N. Y., Secretary.

American Medical Women's Association, Cleveland, June 1-2. Dr. Etta Gray, 649 South Olive St., Los Angeles, Secretary.

American Neurological Association, Atlantic City, N. J., June 9-11. Dr. Henry A. Riley, 117 East 72d St., New York, Secretary.

American Ophthalmological Society, Hot Springs, Va., May 29-June 1. Dr. Eugene M. Blake, 303 Whitney Ave., New Haven, Conn., Secretary.

American Orthopedic Association, Toronto, Canada, June 9-12. Dr. Charles W. Peabody, 474 Fisher Bldg., Detroit, Secretary.

American Otological Society, Atlantic City, N. J., May 26-28. Dr. Isidore Friesner, 36 East 73d St., New York, Secretary.

American Pediatric Society, Hot Springs, Va., May 22-24. Dr. Hugh McCulloch, 325 North Euclid Ave., St. Louis, Secretary.

American Proctologic Society, Cleveland, June 1-3. Dr. William H. Daniel, 1930 Wilshire Blvd., Los Angeles, Secretary.

American Psychiatric Association, Richmond, Va., May 5-9. Dr. Arthur H. Ruggles, 305 Blackstone Blvd., Providence, R. I., Secretary.

American Radium Society, Cleveland, June 2-3. Dr. William E. Costolow, 1407 South Hope St., Los Angeles, Secretary.

American Rheumatism Association, Cleveland, June 2. Dr. A. R. Shands, Dupont Institute, Wilmington, Del., Secretary.

American Society for Clinical Investigation, Atlantic City, N. J., May 5. Dr. Eugene M. Landis, University of Virginia Hospital, Charlottesville, Va., Secretary.

American Society of Clinical Pathologists, Cleveland, May 30-June 1. Dr. A. S. Giordano, 531 North Main St., South Bend, Ind., Secretary.

American Therapeutic Society, Cleveland, May 30-31. Dr. Oscar B. Hunter, 1835 Eye St. N.W., Washington, D. C., Secretary.

American Urological Association, Colorado Springs, Colo., May 19-22. Dr. Clyde L. Deming, 789 Howard Ave., New Haven, Conn., Secretary.

Association for Research in Ophthalmology, Cleveland, June 3. Dr. Conrad Berens, 35 East 70th Street, New York, Secretary.

Association of American Physicians, Atlantic City, N. J., May 6-7. Dr. Hugh J. Morgan, Vanderbilt University Hospital, Nashville, Tenn., Secretary.

California Medical Association, Del Monte, May 5-8. Dr. George H. Kress, 450 Sutter St., San Francisco, Secretary.

Connecticut State Medical Society, Bridgeport, May 21-22. Dr. Creighton Barker, 258 Church St., New Haven, Secretary.

Georgia, Medical Association of, Macon, May 13-16. Dr. Edgar D. Shanks, 478 Peachtree St., N.E., Atlanta, Secretary.

Hawaii Territorial Medical Association, Honolulu, May 2-4. Dr. A. L. Craig, Dillingham Bldg., Honolulu, Secretary.

Idaho State Medical Association, Sun Valley, June 18-21. Dr. F. B. Jeppesen, 105 North 8th St., Boise, Secretary.

Illinois State Medical Society, Chicago, May 20-23. Dr. Harold M. Camp, 224 South Main St., Monmouth, Secretary.

Iowa State Medical Society, Davenport, May 14-16. Dr. R. L. Parker, 3510 Sixth Ave., Des Moines, Secretary.

Kansas Medical Society, Topeka, May 13-15. Mr. C. G. Munns, 112 West Sixth St., Topeka, Executive Secretary.

Maine Medical Association, York Harbor, June 22-24. Dr. Frederick R. Carter, 22 Arsenal St., Portland, Secretary.

Massachusetts Medical Society, Boston, May 21-22. Dr. Robert N. Nye, 8 Fenway, Boston, Secretary.

Medical Library Association, Ann Arbor, Mich., May 29-31. Miss Anna C. Holt, 25 Shattuck St., Boston, Secretary.

Minnesota State Medical Association, St. Paul, May 26-28. Dr. B. B. Souster, 493 Lowry Medical Arts Bldg., St. Paul, Secretary.

Mississippi State Medical Association, Biloxi, May 13-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Montana, Medical Association of, Great Falls, June 24-26. Dr. Thomas F. Walker, 206 Medical Arts Bldg., Great Falls, Secretary.

National Gastroenterological Association, New York, May 13-16. Dr. G. Randolph Manning, Room 319, 1819 Broadway, New York, Secretary.

National Tuberculosis Association, San Antonio, Tex., May 5-8. Dr. Charles J. Hatfield, 1790 Broadway, New York, Secretary.

Nebraska State Medical Association, Lincoln, May 5-8. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln Secretary.

New Hampshire Medical Society, Manchester, May 13-14. Dr. Carleton R. Metcalf, 5 South State St., Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 20-22. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New York State Association of Public Health Laboratories, Syracuse, May 19. Miss Mary B. Kirkbride, New Scotland Ave., Albany, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 19-21. Dr. I. H. Manning, Chapel Hill, Secretary.

North Dakota State Medical Association, Grand Forks, May 19-21. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Ohio State Medical Association, Cleveland, June 3. Mr. C. S. Nelson, 79 East State St., Columbus, Executive Secretary.

Oklahoma State Medical Association, Oklahoma City, May 19-22. Dr. L. S. Willour, 210 Plaza Court Bldg., Oklahoma City, Secretary.

Pacific Coast Oto-Ophthalmological Society, Los Angeles, May 26-29. Dr. C. Allen Dickey, 450 Sutter Street, San Francisco, Secretary.

Pacific Northwest Medical Association, Spokane, Wash., June 25-28. Dr. C. W. Countryman, 407 Riverside Ave., Spokane, Wash., Secretary.

Rhode Island Medical Society, Providence, May 28-29. Dr. Guy W. Wells, 124 Waterman St., Providence, Secretary.

Society of Surgeons of New Jersey, Painfield, May 28. Dr. Walter B. Mount, 21 Plymouth St., Montclair, Secretary.

South Dakota State Medical Association, Mitchell, May 18-20. Dr. Clarence E. Sherwood, 107½ Egan Ave., Madison, Secretary.

Texas, State Medical Association of, Fort Worth, May 12-15. Dr. Holman Taylor, 1404 West El Paso St., Fort Worth, Secretary.

Utah State Medical Association, Salt Lake City, June 12-14. Dr. D. G. Edmunds, 610 McIntyre Bldg., Salt Lake City, Secretary.

West Virginia State Medical Association, Charleston, May 12-14. Mr. Joe W. Savage, Public Library Bldg., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1931 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, St. Louis

24:1-118 (Jan.) 1941

Keratoplasty: Comments on Technic of Corneal Transplantation: Source and Preservation of Donor's Material: Report of New Instruments. R. Castroviejo, New York.—p. 1.
Hypofunction of Lacrimal Gland. A. de Rötth, Spokane, Wash.—p. 20.
Eyegrounds of Patients with Functional Psychoses: Review of Literature. A. Gralnick, Central Islip, N. Y.—p. 26.
Pharmacologic Behavior of Dilator Iridis. E. Sachs and P. Heath, Detroit.—p. 34.
What Subluxated Lenses Reveal About Mechanism of Accommodation. W. H. Luedde, St. Louis.—p. 40.
Plastic Reconstruction of Upper Lid. J. M. McLean, Baltimore.—p. 46.
Sympathetic Ophthalmia Treated with Sulfanilamide: Case: Pathologic Report. R. C. Gamble, Chicago.—p. 49.
The Limits of Tyndallimetry in the Anterior Chamber. P. C. Kronfeld, Chicago.—p. 51.
Van der Hoeve's Syndrome: Four Occurrences in Three Generations of One Family. P. M. Corboy, Valparaiso, Ind.—p. 57.
Distribution of Sulfapyridine Between Blood, Aqueous Humor and Cornea. K. Meyer, H. S. Bloch and W. P. Chamberlain Jr., New York.—p. 60.

Journal of the Mount Sinai Hospital, New York

7:243-600 (Jan.-Feb.) 1941. **Partial Index**

An Appreciation of Howard Lilienthal. M. Manges, New York.—p. 245.
Some Pathologic Features of Primary and Secondary Extramedullary Tumors of Spinal Cord. C. A. Elsberg, New York.—p. 247.
*Chronic Constrictive Pericarditis: Medical and Surgical Aspects. B. S. Oppenheimer, W. M. Hitzig and H. Neuhof, New York.—p. 270.
*Recovery from Meningococcemia and Meningococcic Endocarditis Following Anaphylactic Shock. G. Baehr, New York.—p. 294.
Cardiac Infarction Induced by Unusual Effort. E. P. Boas, New York.—p. 307.
Necessity for "Typing" Pneumonias. J. G. M. Bullowa, New York.—p. 316.
*Problem of Cancer of Esophagus. J. H. Garlock, New York.—p. 349.
Therapeutic Value of Implanted Estrogens. S. H. Geist, New York.—p. 353.
Primary Neuroectodermal Brain Tumors; Their Transition from Benign to Malignant Forms. J. H. Globus, New York.—p. 361.
Thrombo-Angiitis and Rickettsia—Etiologic Relationship. C. Goodman, New York.—p. 391.
*Congenital Hypertrophic Pyloric Stenosis. S. V. Haas, New York.—p. 411.
Bernard-Horner Syndrome, as Complication in Chest Operations. I. Kross, New York.—p. 445.
Psoriasis with Tumor-like Formations: Observations Over a Twenty Year Period. O. L. Levin and H. T. Behrman, New York.—p. 449.
Thoracoplasty in Children. B. Schick and Bella Singer, New York.—p. 486.
Suprachoroidal Iridotasis for Chronic Glaucoma: Preliminary Report. J. S. Somberg, New York.—p. 516.
Successful Suture of Penetrating Stab Wounds of Heart, with Some Observations on Subject: Two Cases. J. B. Stenbuck, New York.—p. 520.

Chronic Constrictive Pericarditis.—Oppenheimer and his co-workers report 8 cases of constrictive pericarditis treated surgically. Two of the patients have been well eight and a half and four years after pericardiectomy, 2 have had pronounced postoperative improvement for two and one years respectively, and 1 operated on July 19, 1940 was improved four weeks after a partial pericardiectomy; there was an elevated venous pressure with a disappearance of ascites. Three patients have died, 2 respectively three and seven days after operation; 1 after a Brauer and a partial pericardiectomy had transitory relief, a second pericardiectomy was followed by relief after months and ultimate economic restitution, and death was due to adenocarcinoma of the rectum. The cases represent an extrinsic form of heart disease in which a thickened, contracted, at times calcified, pericardium incarcerates and compresses the heart, interfering with its diastolic expansion and less with its systolic contraction, causing thereby extreme venous stasis. The etiology of 5 of the cases was obscure, 1 was tuberculous in origin and in 2 there was a clinical history of rheumatic fever. The symptoms of chronic constrictive pericarditis are primarily due to constriction and not to the fixation of the heart to surrounding structures. The diagnosis may be made on the history and at times on inspection alone. The direct operative approach has consisted essentially in an extrapleural exposure of the heart, release of the right side with special dissection at the venae cavae after its left side is released and removal of the constricting membranes in a one stage operation. In cases in which doubt exists as to how far to proceed, possible additional decortication in a second stage should be considered. In cases in which typical constrictive pericarditis is not encountered at operation, too extensive decortication seems unwise; the results of a partial operation can be awaited and a second stage performed, if indicated. The authors occasionally practice a two stage operation and advocate it under the foregoing circumstances. Despite considerable experience they remain in doubt as to how much of the diseased pericardium should be excised in some cases. They believe excision should be generous over the right side of the heart, although there is usually no special reason for dissection over the right auricle and venae cavae. Excision over the left side of the heart must be extended to the posterior surface. It is their practice to excise in this region and over the diaphragm until the heart, including the apex, is well released. A constricting membrane will not reform after excision if enough of it is removed to release the heart as the source of the fibrous tissue, the diseased pericardium, is removed. Medical treatment is only palliative. All operations should be performed after careful preparation.

Recovery from Meningococcemia After Anaphylactic Shock.—Baehr suggests that the universal employment of sulfapyridine has served to obscure the equally dramatic crisis which signalizes spontaneous recovery in lobar pneumonia. He reports an instance which illustrates that an insignificant physical or chemical agent is sometimes capable of setting off an immunologic trigger mechanism which suddenly controls a previously overwhelming infection. After an illness of ten weeks from what appeared to be a fatal meningococcic infection and at a time when death appeared imminent, anaphylactic shock followed by a chill and a temperature of 106.4 F. resulted in immediate and complete sterilization of the infection. Although spontaneous recovery from meningococcemia and meningococcic endocarditis is not rare, such an outcome could not have been expected in this instance. Hyperpyrexia may have played a part, as gram-negative cocci are unusually thermolabile. However, the temperature had repeatedly been as high as 105.8 F. without any influence. During the ten weeks of illness the immunologic forces had been unable to overcome the infection. The sudden and almost fatal anaphylactic shock from a drop and a half of serum, and perhaps the severe rigor and pyrexia which followed, had a rapid and profound influence on the balance between the infection and the forces of recovery. Ten days after the incident the patient, a girl of 13, was able to walk out of the hospital.

Cancer of Esophagus.—Garlock believes that the next few years will see the acceptance of surgical treatment for cancer of the esophagus as the only sound therapy. This cancer is usually a slowly growing neoplasm. It remains a local disease for some time before metastasizing. While it may not spread peripherally until late, it may become locally inoperable in the early stages because of fixation to the nearby vital structures, the aorta or bronchus. More rapid progress in the surgical treatment will be made when increasing numbers of early cases (persistent dysphagia) in which esophagoscopy, biopsy and fluoroscopic and roentgen examination have been done are referred to the surgeon. The best results of surgical treatment follow early diagnosis, careful preoperative preparation, sound operative conception, expertly administered anesthesia, meticulous postoperative care and immediate treatment of complications as they arise. The ideal operation is one which removes the tumor-bearing portion of the organ and a wide margin of normal tissue and reestablishes esophagogastric continuity by some type of anastomosis. When the cancer is located in the middle third of the organ, this is not possible and the procedure is to preserve the lower 2 inches of the organ (following resection of the tumor-bearing portion), leaving it attached to the stomach and bringing it out through

a small abdominal incision, where the divided end is sewn to the skin to form an esophagostomy. In this way the sphincteric mechanism of the cardia is preserved, and leakage does not occur. The operation is completed in one stage. This change greatly simplifies the subsequent construction of a skin-lined tube on the anterior wall of the chest to replace the resected esophagus and obviates the use of a rubber tube. In a fairly large group of successful resections of this type there has been little disturbance of esophageal or gastric function. During the last four and a half years the author has operated on 20 patients with squamous cell carcinoma of the esophagus. Among the 14 who presented operable lesions there were 5 deaths. Of the 9 survivors, 5 are alive and well today; 1 for almost four years, 1 for eighteen months, 1 for thirteen months, 1 for seven months and 1 for six weeks. The remaining 4 patients died of local recurrence or other cause twenty-two months, one year, one year, and three and a half months respectively after operation. During the same period he operated on 15 patients with adenocarcinoma of the cardiac end of the stomach with esophageal obstruction. Only 5 had operable lesions, 2 of whom died (1 of cerebral embolus on the third day and 1 from inanition and general debility on the third day with negative necropsy). The surviving patients are alive and well, respectively fourteen, four and three months after operation. The patient with cancer of the esophagus can be assured of a reasonable chance of survival following surgical intervention.

Congenital Hypertrophic Pyloric Stenosis.—According to Haas, the literature of the last ten years shows that treatment of congenital hypertrophic pyloric stenosis is almost equally divided between surgical and medical procedures. The recommended medical procedures are all of value, but the fundamental requirement is the relaxation of the pyloric sphincter. Atropine plus calcium best fulfil this requirement. Other important adjuvants are phenobarbital and thick gruel. The author's procedure is to use breast milk, if available; if not, protein milk or evaporated milk. With artificial feeding some sugar or thick gruel is added in amount suitable to the size of the infant. The feedings are not given more often than every four hours; intervals of six hours are sometimes better. In each feeding there is placed $\frac{1}{1.000}$ grain (0.000065 Gm.) of atropine sulfate. If vomiting continues after two feedings the dose of atropine is doubled and increased by $\frac{1}{1.000}$ grain every second feeding until vomiting is controlled or signs of atropine intoxication require a temporary reduction in dosage. If it is necessary to use the drug hypodermically, clyses or saline drip with or without dextrose and occasionally a blood transfusion are used. Saline solution (from 750 to 1,500 cc.) by continuous drip is superior to single small injections for combating dehydration, alkalosis and a disordered chloride metabolism. One drachm (4 Gm.) of calcium gluconate is added to the day's formula. When the atropine dosage is raised to the point of tolerance and sufficient relief is not obtained, ¼ grain (0.016 Gm.) of phenobarbital is added to each feeding. In some cases the dose of phenobarbital must be increased. The infant should be kept in a semiupright position turned toward the right side. The medication will have to be continued over a variable period, in some cases for months. After the acute phase the medication becomes part of the feeding routine. From time to time an attempt is made to reduce the dose of atropine, and if vomiting does not recur it is discontinued. The tendency to resort to surgery in cases of pyloric stenosis without adequate medical treatment is not in keeping with good medical tradition. Surgical intervention (preferably the Rammstedt operation or some modification of it) is indicated only when an experienced surgeon is available, if proper cooperation in the home is not available and when proper medical treatment fails. The literature of the last ten years shows that the mortality with surgical treatment (2,840 cases) was 6 per cent and with medical treatment (1,218 cases) 7.8 per cent. Of the author's 179 patients 8 were operated on after medical treatment failed; there were 7 recoveries and 1 death. Among the 171 medically treated patients there were 2 deaths, both occurring during the recovery phase when the atropine was being reduced. The cause of death was not explained clinically and necropsies were not permitted.

Kansas Medical Society Journal, Topeka

42:1-44 (Jan.) 1941

The Diet of the Doctor. W. H. Olmsted, St. Louis.—p. 1.
Outline of Treatment of Acute Intestinal Obstruction. T. G. Orr, Kansas City.—p. 6.
The Goiter Patient. O. W. Longwood, Stafford.—p. 10.
Method to Determine Packed White Cell Volume of Blood. I. R. Morrison, Atchison.—p. 17.
Tumors of Pleura and Peritoneum, Anatomohistologic Study: Summary. M. Gerundo, Topeka.—p. 18.

Laryngoscope, St. Louis

51:1-114 (Jan.) 1941

Review of Literature of Tuberculosis in the Field of Otolaryngology, Chiefly for the Latter Part of 1939 and the Year 1940. F. R. Spencer, Boulder, Colo.—p. 1.
One Stage Fenestration Operation Using Postaural Approach. L. Kend, New York.—p. 37.
The Earpiece—in Testing for and Fitting Hearing Aids. B. A. Schier, New York.—p. 52.
Neoplasms of Antrum, Nasopharynx and Hard Palate. I. Arons, New York.—p. 61.
Intranasal Operation on Frontal Sinus. C. Stamm, Philadelphia.—p. 77.
Sphenotemporal Lobe Abscess with Analysis of Little Known Clinical Symptoms. D. L. Poe, New York.—p. 87.
Carcinoma of Larynx: Review of 170 Consecutive Cases. W. S. Peck, J. H. Maxwell and F. Lamberson, Ann Arbor, Mich.—p. 97.

Military Surgeon, Washington, D. C.

88:1-96 (Jan.) 1941

Medical and Sanitary Care of the Civilian Population Necessitated by Attacks from Hostile Aircraft. L. W. Johnson.—p. 1.
The Veterans' Administration and National Defense. F. T. Hines.—p. 24.
The Dental Service in the Military Establishment. L. C. Fairbank.—p. 29.
The Medical Officers' Responsibility in the Present Emergency. L. A. Fox.—p. 32.
Nutrition and National Defense. M. L. Drazin.—p. 39.
Method of Armory Preparation for Field Exercises. G. W. Ainlay.—p. 51.
Preanesthetic Medication with Special Consideration of Problems in Maxillofacial Surgery. E. E. Lyman.—p. 57.
Some Unpublished Letters of Florence Nightingale. H. W. Jones.—p. 63.

Surgery, Gynecology and Obstetrics, Chicago

72:1-128 (Jan.) 1941

Transplantation of Skin and Subcutaneous Tissue to Hand. S. L. Koch, Chicago.—p. 1.
Surgery of Modern Warfare. F. A. Coller and J. M. Farris, Ann Arbor, Mich.—p. 15.
*Rationale and Use of Oxygen in Postoperative Treatment of Hyperthyroidism. J. G. Schnedorf, R. D. McClure and A. B. McGraw, Detroit.—p. 26.
Surgical Problem of Chronic Gastritis. H. Brunn and R. L. Gold, San Francisco.—p. 31.
Effect of Repeated Pregnancies on Rabbits with Renal Hypertension. L. V. Dill, C. E. Isenhour, J. F. Cadden and A. Kuder, New York.—p. 38.
Nasal Simultaneous Gastroduodenal Aspirator: Its Use in Postoperative Gastrointestinal and Abdominal Surgery. M. Einhorn, New York.—p. 48.
*Obstetric Experiences of Women Paralyzed by Acute Anterior Poliomyelitis. S. Kleinberg and T. Horwitz, New York.—p. 58.
*Liver Cell Fat Necrosis Caused by Pancreatic Reflux. W. Schiller, Chicago.—p. 70.
Reconstruction of Penile Urethra Following Trauma. E. P. Whelan, Nutley, N. J.—p. 81.
Partial Selective Thoracoplasty and Pedicle Muscle Flaps in Treatment of Chronic Empyema. A. Behrend, Philadelphia.—p. 87.
Modified Transverse Incision for Low Abdominal Operations. L. S. Cherney, San Francisco.—p. 92.
Practical Points in Diagnosis and Treatment of Fractures of Jaws. J. A. Doherty, Boston.—p. 96.
Straight Lateral Incision for Unilateral Suboccipital Craniotomy. A. W. Adson, Rochester, Minn.—p. 99.
Hammer Toe: New Procedure for Its Correction. S. Selig, New York.—p. 101.
Fractures in Neck of Femur: Accurate Subcutaneous Fixation with Screws. E. O. Geckeler and A. Tuttle, Philadelphia.—p. 106.

Oxygen Postoperatively for Hyperthyroidism.—Schnedorf and his collaborators point out that in the toxic thyroid patient (in whom oxygen requirements are greater) it is especially important to remember that anoxemia is present for some time before cyanosis is evident. Arterial blood oxygen saturation may be below normal in patients with hyperthyroidism. The authors determined the blood oxygen saturation of the femoral artery in 12 hyperthyroid patients before and about one hour after thyroidectomy. The normal oxygen

saturation of 6 of the 12 patients was depressed from 2 to 7 per cent under basal conditions before operation. This depression was seen most frequently in toxic patients with high metabolic rates. In spite of using a combination of avertin with amylene hydrate, ethylene and oxygen for the anesthetic a further depression of arterial blood oxygen saturation of 10 patients followed operation. No significant fall in blood pressure was observed. The effect of the basal metabolic rate on oxygen consumption and vital processes of 50 patients was studied. Decided differences in the oxygen consumption and the vital processes were observed under basal conditions. Hypothyroid patients had a lower body temperature, a slower pulse and slower respiration and absorbed less oxygen per minute than the normal patients did. In the patients with appreciably increased basal metabolic rates these processes were considerably increased. The cardiovascular reactions in toxic goiter are increased. In an attempt to transport more oxygen and nourishment to the tissues, and carbon dioxide and metabolic waste products away from them, the heart rate increased from an average basal normal rate of 78 to the average basal hyperthyroid rate of 111 beats per minute. This increase greatly decreases the cardiac reserve. The increased pulse rate interferes with the coronary circulation to the myocardium. Prolonged anoxemia under increased demand may lead to angina pectoris, coronary occlusions, myocardial asthenia and decompensation. The hyperexcitability of the nervous system may lead to arrhythmia and irregularity. Acute and chronic anoxemia causes enlargement, hypertrophy and fatty degeneration of the heart. With an increased basal metabolic rate an increase in the respiratory rate occurs. The tachypnea is a physiologic attempt to increase the absorption of oxygen and to facilitate aeration of the quickened circulation. Dyspnea is a prominent symptom in advanced cases. The patient is conscious of this difficulty and feels that he must voluntarily assist the normal movements. This leads to increased restlessness and nervousness. The vital capacity is decreased below normal. The physiologic processes are less stable than in the normal patient, and therefore the reactions of the toxic thyroid patient should be closely watched because they are violent and superimpose a further strain on the already overburdened vital reserves. Increase in the pulse rate, temperature and respiratory rate are most common following thyroidectomy in the very toxic patient. However, severe reactions and fatal crisis may be precipitated by relatively minor factors. The use of oxygen therapy postoperatively seems apparent. Since the authors' more extensive use of the liquid oxygen tent immediately after operation they have had only 5 thyroid deaths among 202 consecutive operations; 2 of these were due to bronchopneumonia and 3 to acute hyperthyroidism. The cool moist atmosphere in the liquid oxygen tent and the high oxygen concentration exerted a sedative action and decreased restlessness. The high oxygen tension made breathing easier, decreasing its rate, lessening or abolishing dyspnea, decreasing the heart rate and so maintaining the cardiac reserve and frequently correcting arrhythmia and decompensation. The elevated postoperative body temperature was frequently restored early to normal.

Pregnancy and Acute Anterior Poliomyelitis.—Kleinberg and Horwitz determined the effect of acute anterior poliomyelitis on 243 women who had subsequent pregnancies. They examined 44 of the women, and the data on the remaining 199 were obtained through questionnaires filled out by the attending obstetrician and orthopedic surgeon and in some instances by the patient. Among the series there were 13 women whose pregnancy was complicated by an acute attack of anterior poliomyelitis. Asymmetry of the pelvic inlet was found among approximately 80 per cent of the women. The distortion was usually mild and did not produce dystocia. Pelvic asymmetry was absent in those who because of extensive paralysis were completely bedridden, never having attempted to bear weight or to get about with braces and crutches. There were four main types of pelvic deformity: lateral pelvic obliquity, increased anterior pelvic tilt with exaggerated lumbar lordosis, anteroposterior axis deviation or rotation about a longitudinal axis and rotation of one innominate bone on the other about a transverse axis or torsional deformity. Of 15 cases reported in the literature, 1 case reported to them and the 13 cases collected by them the authors conclude that pregnancy complicated by acute anterior poliomyelitis may be anticipated to progress normally, with a normal termination of labor and with normal offspring. The involuntary contractions of the uterus and the ability of the uterus to expel its contents spontaneously also observed in patients paralyzed by cord tumors, spondylitis and vertebral fracture are due to the fact that the uterus has an independent nerve supply and will contract after the spinal cord is transected and after its sympathetic nerve supply is extirpated. There was no intrauterine poliomyelitis among the 29 cases. The passive immunity of the offspring derived from the mother does not persist for long, as a few cases of acute anterior poliomyelitis in infants less than 1 month of age (earliest, 9 days) have been reported. Analysis of the 243 patients who became pregnant one year or more after an acute attack of anterior poliomyelitis reveals that a normal and uneventful pregnancy and labor with normal offspring may be anticipated. There is no indication for interruption of pregnancy, except those reasons that would also be operative in nonparalytic women. Cesarean section was utilized in a higher percentage (11.5) of the paralytic women than in a comparable nonparalytic series, but it is the authors' belief that in some instances it may not have been warranted and that therefore the percentage probably does not represent the true index of the need of cesarean section for paralytic women.

Liver Cell Fat Necrosis Caused by Pancreatic Reflux.—On the basis of information gained from clinical, pathologic and experimental investigation on liver cell fat necrosis, Schiller believes that evidence of pancreatic reflux into the liver may be expected when the liver in the presence of intrahepatic fat necrosis contains neutral fat as a result of fatty degeneration or infiltration. The degeneration must be severe. When the degeneration is mild, the relatively small droplets are surrounded by a layer of protoplasm sufficiently thick so that the lipase cannot penetrate through this protecting layer. Only when the liver cell is transformed into a fat cell consisting of a large drop of fat surrounded by a thin cell membrane can the lipase penetrate through the membrane and split the fat. The author has examined the livers of 16 patients with pancreatic fat necrosis. All showed fatty degeneration and infiltration. The degeneration was not severe enough. In 6 cases there was a periportal hypertrophic cirrhosis with fatty infiltration. In 5 of these, either the fatty transformation of the liver cells was not severe enough or no reflux had occurred. The sixth case showed the changes expected. In nonspecific necrosis of fat tissue the character of the necrotic areas is different from that seen in specific pancreatic fat necrosis, in which the lipase at once splits large amounts of fat and thus produces masses of fatty acid crystals long before the surrounding tissue can produce a protective granulation tissue. The foci of intrahepatic fat necrosis in the author's case were exactly like those of the pancreatic type. Even though no fat necrosis of the pancreas and the adjacent fat tissue were present, the morphology of the liver foci with the masses of fatty acid needles pointed to the action of pancreatic lipase. Necrosis of liver tissue is a rather frequent pathologic entity in red and yellow atrophy. However, small necrotic areas are also frequently found in cirrhotic livers. Examination of a large number of slides taken from cases of liver atrophy and cirrhosis has convinced the author that in these cases hepatic tissue never contains fatty acids or fat salts. Concerning the route by which the pancreatic lipase reaches the hepatic tissue there are several possibilities. Reflux of pancreatic secretion to the liver by way of the bile duct must be admitted in the presence of pancreatic stones large enough to block the papilla of Vater. The pancreatic and hepatic biliary ducts may be transformed into one communicating system by obstructing the outlet—the papilla of Vater—the most frequent cause of which is stones. Spasm of the sphincter of Oddi and edema of the duodenal mucosa must also be considered. Lipase in the bile is conclusive evidence of pancreatic reflux, as normal bile contains no lipase.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

2:75-166 (Dec.) 1940

Treatment of Sciatica, Brachialgia and Occipital Headache. R. Stockman.—p. 77.
Fibrositis: Some Old and New Points of View. C. W. Buckley.—p. 83.
Nature of Fibrositis and Influence of Psychologic States on It. R. G. Gordon.—p. 89.
Fibrositis and Pain. J. B. Harman.—p. 101.
Differential Diagnosis of Periarticular Fibrositis and Arthritis. C. H. Slocumb.—p. 108.
Fibrositis and Infection. D. H. Collins.—p. 114.
Laboratory Findings in Fibrositis. J. Race.—p. 127.
Fibrositis Among Industrial Workers. G. Slot.—p. 134.
Arthritic Sequelae of Pneumatic Drilling. W. S. C. Copeman.—p. 141.
Streptococcus Antifibrinolysin in Rheumatoid Arthritis and Spondylitis Ankylopoietica. C. B. Perry.—p. 147.

British Heart Journal, London

3:1-74 (Jan.) 1941

History of Mitral Stenosis. H. Rolleston.—p. 1.
Chest Lead Changes as Sole Electrocardiographic Evidence of Heart Disease. R. M. Sussman and A. Lieberson.—p. 13.
Pulmonary Embolism: Diagnosis by Chest Lead Electrocardiography. P. Wood.—p. 21.
T Wave Inversion, Heart Size and Functional Capacity: Correlation Between These in 100 Patients with Hypertension. S. Schnur.—p. 30.
Atrial Septal Defect. D. E. Bedford, C. Papp and J. Parkinson.—p. 37.
Electrocardiographic Changes After Anoxemia and Exercise in Angina of Effort. C. Evans and G. Bourne.—p. 69.

British Journal of Experimental Pathology, London

21:315-368 (Dec.) 1940

Indole as Precursor in Synthesis of Tryptophan by Bacteria. P. Fildes.—p. 315.
Concentration and Detoxification of Human Urine for Biologic Pregnancy Diagnosis. L. D. Scott.—p. 320.
Identity of Hyaluronidase and Spreading Factor. E. Chain and E. S. Duthie.—p. 324.
Some Observations on Preparation and Properties of Substrate of Lysozyme. L. A. Epstein and E. Chain.—p. 339.
*Action of Sulfanilamide on Virus of Lymphogranuloma Venereum. G. M. Findlay.—p. 356.
Inactivation of Cobra Venom by Finely Dispersed Emulsion. A. C. Frazer and H. C. Stewart.—p. 361.

Action of Sulfanilamide on Venereal Lymphogranuloma Virus.—In view of the wide range of chemotherapeutic activity of sulfanilamide, Findlay tried to determine whether the curative activity of sulfanilamide on the virus of venereal lymphogranuloma was also inhibited when *p*-aminobenzoic acid was administered simultaneously with the sulfanilamide. He also examined the effect of *p*-aminobenzoic acid and sulfanilamide on hemolytic streptococci injected intracerebrally in mice. His studies show that *p*-aminobenzoic acid given with sulfanilamide inhibits to a high degree the therapeutic action of sulfanilamide on the venereal virus. If the inhibitory action of *p*-aminobenzoic acid is due to the fact that it competes with sulfanilamide for a particular enzyme, it follows that *p*-aminobenzoic acid or some substance formed from *p*-aminobenzoic acid in the tissues is an essential metabolite of the virus of venereal lymphogranuloma. The question whether this substance can be synthesized by the virus or is an essential growth factor supplied by the tissues in which the virus grows requires further investigation. Since the viruses of venereal lymphogranuloma and trachoma are the only ones known to be acted on by sulfanilamide, it is tempting to regard them as the only two which require *p*-aminobenzoic acid for metabolism. For all other viruses *p*-aminobenzoic acid would thus not be an essential metabolite. An alternative theory, however, of the failure of sulfanilamide to act on all other viruses would be that in the course of their metabolism so much *p*-aminobenzoic acid is formed that the chemotherapeutic action of sulfanilamide is completely inhibited. Experiments are under way to determine whether the alternative theory is valid.

Journal of Laryngology and Otology, London

55:473-530 (Nov.) 1940

History of Otology. D. Guthrie.—p. 473.
Aims and Methods of Teaching in Laryngology. T. B. Layton.—p. 495.
Teaching. W. M. Mollison.—p. 503.

Journal of Pathology and Bacteriology, Edinburgh

52:1-154 (Jan.) 1941

Acute Necrotizing Glomerulonephritis. J. S. Dunn and G. L. Montgomery.—p. 1.
Experimental Phosphate Nephritis in Rat. D. McFarlane.—p. 17.
Normal Hemopoiesis in Intrauterine and Neonatal Life. J. R. Gilmour.—p. 25.
Studies on Suppurative Polyarthritis (Joint Ill) in Lambs. F. Blakemore, S. D. Elliott and J. Hart-Mercer.—p. 57.
Experimental Meningococcic Meningoencephalitis in Mice. C. H. Andrewes and Dora Lush.—p. 85.
Investigation of Outbreak of Food Poisoning Associated with Organisms of Proteus Group. K. E. Cooper, Joan Davies and Jean Wiseman.—p. 91.
Hemolysis and Production of Opalescence in Serum and Lecithovitellin by α Toxin of Clostridium Welchii. R. G. Macfarlane, C. L. Oakley and C. G. Anderson.—p. 99.
Estimation of Combining Power of Clostridium Welchii (Type A) Toxoid. F. P. O. Nagler.—p. 105.
Cross Infection in Diphtheria Wards. H. D. Wright, H. R. Shone and J. R. Tucker.—p. 111.

Lancet, London

1:67-98 (Jan. 18) 1941

Present Position of Sulfonamide Therapy. W. R. Thrower.—p. 67.
Angina of Throat Associated with Mononucleosis. C. J. Fuller.—p. 69.
Anginose Glandular Fever. H. S. Barber.—p. 71.
*Chronic Benzene Poisoning. J. L. Hamilton-Paterson.—p. 73.
Pick's Syndrome: Case. Constance Shaw.—p. 76.
Traumatic Streptococcic Meningitis. D. W. Boatman.—p. 76.

Chronic Benzene Poisoning.—Hamilton-Paterson records a series of clinical and hematologic examinations in women exposed to benzene fumes. These women used a rubber solution of commercial 90 per cent benzene and petroleum spirit. They worked in a large room with natural ventilation assisted by extraction fans. Three cases of chronic benzene poisoning are described in detail and the hematologic pictures of 18 fellow workers are given. Benzene has a destructive action on the bone marrow, and aplasia may ensue; any of the cellular elements may be affected, and a large variety of changes are reported. Leukopenia is the commonest of these, but leukemia may develop either as an acute or as a chronic myelogenous form. Anemia usually occurs later in the disease, and most observers report a mild type with a low color index, but a severe hyperchromic type has been described. The common leukopenia may progress to complete granulocytopenia. In addition to the 21 women who were examined, 14 who were working at the same factory were questioned and 6 had symptoms which might be due to benzene. Unfortunately no blood counts could be made. The chief symptoms were giddiness, menstrual disturbances, epistaxis and watering of the eyes, nausea, morning heaviness, swelling of the legs and lassitude. The author stresses that it must be borne in mind that the initial symptoms in benzene poisoning are slight and easily overlooked, and that the patient may exhibit symptoms and signs pointing to some other diagnosis. Thus the diagnosis of benzene poisoning can be missed if the occupational history is not investigated and if only one type of blood picture is looked for. The blood may show either anemia or polycythemia, leukopenia or leukocytosis, a relative decrease or increase of polymorphonuclears, and eosinophilia. The commonest observations, however, are leukopenia and anemia. Menstrual disturbances are suggestive. The ratio of inorganic to organic urinary sulfates is decreased. Urinary sulfate estimation is valuable during and up to a month after the period of exposure to benzene. Residual changes in the blood picture may persist indefinitely and may be accompanied by disability.

Practitioner, London

146:1-64 (Jan.) 1941

Treatment of Toxemias of Pregnancy. E. F. Murray.—p. 1.
Organization of Antenatal Care. R. C. Thomas.—p. 5.
Common Disorders Encountered at a Postnatal Clinic and Their Treatment. L. C. Rivett.—p. 12.
Management of Lactation and of Disorders of Breast in Puerperium. Meave Kenny.—p. 18.
Physiologic Principles in Treatment of Traumatic Shock. R. J. S. McDowall.—p. 21.
War Burns and Their Treatment. C. P. G. Wakeley.—p. 27.
Problems in Shelters: Occurrences and Means of Prevention of Acute Epidemic Infection. W. H. Bradley.—p. 38.
Pelvic Endometriosis. R. J. Kellar.—p. 45.
Modern Therapeutics: XIX. Drugs Used in Treatment of Gastric Disorders. T. I. Bennett.—p. 51.

Presse Médicale, Paris

48:993-1016 (Dec. 11-14) 1940

Coefficient of Pulmonary Ventilation of Effort. C. Lian, Baraige, Danhier and J. Desclaux.—p. 993.
*New French Laws Governing Criminal and Therapeutic Abortion, Laboratory Diagnosis of Pregnancy and Supervision of Confinement Homes. M. Duvoir and G. Hausser.—p. 995.
Histogenesis of Bone Tissue in Light of Delayed Consolidation. A. Cretin.—p. 996.
Encephalitic and Postencephalitic Mental Changes. M. Hamvas.—p. 999.

New French Laws Controlling Abortion.—Duvoir and Hausser report the provisions governing criminal and therapeutic abortion, the laboratory determination of pregnancy and the supervision of confinement homes, enacted into law in 1939 with the active cooperation of the French Society of Legal Medicine. The penalties (penitentiary, fines, temporary or permanent cancellation of right to practice) for criminal abortion have been enlarged to include women subsequently proved not to have been pregnant. Physicians are freed from the obligation enjoined by the code of professional secrecy in matters pertaining to criminal abortion. Medical students and midwives make themselves liable to expulsion or exclusion from institutions of higher learning. The provisions against criminal abortion include practically every person who can be proved to have had a connection with the case. Therapeutic abortion is now legalized but surrounded by all possible safeguards against abuse. It must be approved by a conference of three men, the physician in charge and two consultants, one of whom must be a specialist on the list of the civil tribunal. The proceedings are recorded in writing. Therapeutic abortion is permissible only if it can be shown that the mother's life can be saved solely by the abortive act. The laboratory diagnosis for pregnancy must be recommended in writing, authorized by a physician and officially approved. It can be carried out only by laboratories accredited by the public health department. An official record is kept. Confinement homes must have permits to engage in business and are supervised for moral character and hygienic conditions.

Bol. de la Soc. Cubana de Pediatría, Habana

12:581-644 (Dec.) 1940. **Partial Index**

*Vitamin C in Children in Bogotá. C. Torres Umaña.—p. 581.
Technic for Bronchography in Children. A. Castellanos, R. Pereiras and R. Montero.—p. 594.

Vitamin C in Children in Bogota.—According to Torres Umaña, scurvy is rare in Bogota. Elimination of the ascorbic acid in the urine for the first three hours after the injection of 7 mg. is variable in normal children and in those with nutritional or infectious diseases, but without scurvy. The amount of ascorbic acid in 100 cc. of cerebrospinal fluid is about the same as that eliminated in the urine. Children with infections develop insufficiency of vitamin C which can be diagnosed by the diminution of organic ascorbic acid but which does not produce scurvy. The author determined the amount of ascorbic acid in the cerebrospinal fluid of various infants with nutritional diseases or with infections but without scurvy and of the amount of ascorbic acid eliminated in the urine after the administration of 7 mg. of the acid. A vitamin C deficient diet was maintained throughout the experiment. He found that (1) at the beginning of the experiment the amount of ascorbic acid in the cerebrospinal fluid is about the same as that which is eliminated in the urine; (2) after a week in the hospital, without exposure to the sun, the amount of ascorbic acid is lowered in the cerebrospinal fluid and in the urine; (3) after a week of daily administration of ultraviolet radiation for fifteen minutes a day it increased at about the same values as those which existed at the beginning of the experiment. The same results were obtained when the experiment was repeated without previous injection of ascorbic acid. The results suggest that ultraviolet irradiation produces a synthesis of ascorbic acid by the body which varies with the person. He believes that sun irradiation stimulates an organic synthesis of ascorbic acid in man and animals and that the organic production of the substance compensates insufficient supply of vitamin C and prevents scurvy.

Klinische Wochenschrift, Berlin

19:1121-1152 (Nov. 2) 1940. **Partial Index**

Interrelation Between Respiration and Circulation: Metabolism as Respiratory-Circulatory Regulator. G. Zaeper.—p. 1121.
Albucid (Acetylsulfanilamide) in Treatment for Epidemic Meningitis. W. Grunke.—p. 1125.
Specific Dynamic Action After Tolerance Test with Aminoacetic Acid. W. Siede and K. Tietze.—p. 1126.
*Follow-up on Person Immunized Against Tetanus. E. Kestermann and K. E. Vogt.—p. 1129.
Medullary Origin of Poikilocytes: Contribution to Present Status of Formation of Malformed Erythrocytes. G. Habelmann.—p. 1134.
Pathogenesis of Acute Diseases of Hemopoietic System. W. Szonell.—p. 1137.
*Night Blindness as Result of Deficiency in Vitamin A. A. Høygaard.—p. 1139.
Type Differentiation of Meningococci and Its Significance for Epidemiology of Meningococcic Meningitis. W. Goeters.—p. 1141.

Active Immunization Against Tetanus.—Kestermann and Vogt direct attention to the advantages of the active over the passive immunization, pointing out that in active immunization anaphylactic reactions do not have to be feared and that the protection persists for a long time. After the prophylactic administration of serum the antitoxin disappears from the blood stream in from ten to fourteen days. In active immunization, the repetition of injections and the intervals between them are important. The first injection produces comparatively little antitoxin; it makes the organism reactive; only the second injection produces a considerable increase in the antitoxin content. It has been found that the increase in antitoxin after the second injection is the higher, the longer the interval is between first and second vaccination. Intervals of eight or even twelve weeks result in much higher antitoxin titers than intervals of four weeks. However, even after active immunization the quantity of the specific antitoxin in the blood decreases, and French authors have demanded a repetition of the vaccination after one or two years. The authors investigated the antitoxin content of nineteen vaccinated persons at the end of one year. They found that although the antitoxin content of the blood had greatly decreased it was the higher the greater the blood antitoxin had been at the end of the inoculation in the preceding year. A new single "security" vaccination increased the antitoxin content of the blood. The new formation of antitoxin commenced from three to five days after vaccination, and at the end of six weeks it was from ten to three hundred and seventy-five times as high as the initial values (before the "security" vaccination). On account of the great reactive capacity of an organism which previously has undergone active immunization, the "security" vaccination produces such a degree of immunity that the administration of serum seems unnecessary in case of injuries suspected of infection with tetanus.

Night Blindness from Vitamin A Deficiency.—According to Høygaard, Eskimos daily consume approximately 50,000 international units of vitamin A plus some carotene, and their average visual distinction capacity is 1.56 ± 0.023 (for men) and 1.49 ± 0.028 (for women). Seamen (Germans, Norwegians, Swedes), whose daily intake of vitamin A averages between 600 and 1,000 international units, plus carotene, have a visual distinction capacity of 1.2 ± 0.011. Norwegian students who daily consume an average of 3,600 international units plus carotene have a visual distinction capacity of 1.23 ± 0.016. Seamen whose distinction capacity in dim light was reduced experienced an improvement following the intramuscular injection of 20,000 international units of vitamin A. The author concludes that the difference between Eskimos and Europeans is due to the lack of vitamin A in the diet of the latter. The vitamin A content of the Eskimo diet is of animal origin. In the diet of Europeans the most important sources of vitamin A are milk, milk products and eggs. It was long believed that vitamin A could be replaced by carotene, which occurs in many vegetables. It has been proved that some persons utilize only about 5 per cent of the carotene taken in with the food. For this reason a purely vegetarian diet without milk and eggs must be regarded as inadequate. Since an increase in the consumption of milk and eggs encounters economic difficulties, the author suggests, as a provisional measure, that certain foods, such as margarine, lard, milk and perhaps bread, be artificially fortified with vitamin A.

Zeitschrift f. Geburtshülfe u. Gynäkologie, Stuttgart

121:309-436 (Oct. 18) 1940

Positive Implantation Effect with Hypophysis of Early Pregnancy. K. Ehrhardt, T. Konschegg and E. Leinzinger.—p. 309.
Shifting of Serum Protein Bodies in Normal Pregnancy and in Toxicosis. W. Neuweiler.—p. 317.
Delivery in Case of Narrow Pelvis. A. Weissmann.—p. 331.
Clinical Aspects of Uterine Myomas. T. Pütz.—p. 385.
Clinical Aspects of Dysgerminoma of Ovary. E. Hohage.—p. 401.
*Problem of Arrhenoblastoma. W. Kny.—p. 406.
Sacral Teratoma: Two Cases. K. von Pallos.—p. 421.

Arrhenoblastoma.—Kny directs attention to a group of blastomas of the ovary which cause gradual disappearance of female characteristics and the development of virilism. Their varying microscopic aspects have given rise to different theories regarding their genesis and their classification. The author is inclined to accept Robert Meyer's theory. He presents a history of a woman aged 66 who had been troubled with dyspnea, cough, protracted diarrhea, loss of weight, enlargement of the abdomen and swelling of the legs. These symptoms were accompanied by falling out of the hair of the head and by the development of a beard. Necropsy revealed tumors of both ovaries which proved on microscopic studies to be tubular arrhenoblastomas of the atypical solid group of Robert Meyer. The bilaterality and the extensive metastases to the bones and the lungs make this case noteworthy. In view of the fact that the tumors of the two ovaries did not differ much in size and that their structure was identical, the author assumes that the tumors were primary and developed simultaneously. The metastases in the other organs showed an entirely different structure. However, a thorough postmortem examination disclosed no other primary tumor, particularly colloid cancer of the stomach. Changes in the thyroid corresponded to those found in status thyroadrenalis. Microscopic examination of the adrenals was neglected, but the clinical signs justify the assumption of such a status. As a sequel to the skeletal metastases the peripheral blood presented the picture of a pronounced secondary anemia, and the liver and spleen exhibited considerable extramedullary erythromyelopoiesis.

Archiv für Japanische Chirurgie, Kyoto

17:1291-1524 (Nov.) 1940. **Partial Index**

*Clinical Experiences in Transfusion of Preserved Blood. A. Takeshita, S. Goya, Y. Ohashi, Y. Ri, A. Suko, T. Murayama, and H. Nagatani.—p. 1416.
*Studies on the Therapeutic Effects of Vitamin B_1 in Peritonitis and Postoperative Paresis of Gastrointestinal Tract. J. Murakami and H. Utagawa.—p. 1483.

Transfusion of Preserved Blood.—Takeshita and his co-workers made clinical observations in transfusing 33 patients with blood preserved at room temperature for intervals of time varying from one to eighty-four days and 11 patients with blood kept at incubator temperature (35 C.) for one to nine days. In the absence of complications, the transfusion of blood kept at room temperature caused a slight elevation in blood pressure in patients with hypotension, whereas no significant changes were observed in persons with normal blood pressure. The transfusion of incubated blood was accompanied by a greater degree of fluctuation in blood pressure. Pulse rates were but slightly and temporarily accelerated following transfusion of blood kept at room temperature; but after transfusion of blood preserved at 35 C., especially in the presence of hemolysis, the pulse rates remained high for some time afterward. A somewhat similar effect on respiration was noted, in that the respiration remained accelerated after the transfusion of incubated blood. Irrespective of the form of blood used, body temperature became elevated only when complications developed. From these observations the authors conclude that the incidence of complications is practically identical (17.8 per cent) regardless of the nature of blood used in transfusion. The temperature of incubation should never be allowed to exceed 40 C.; but even blood showing a considerable degree of hemolysis as the result of preservation over a long period of time produced no complication other than a transient appearance of hemoglobinuria. Thus these investigators advocate the use of blood preserved at room temperature (10-18 C.) because of its greater convenience in management, since no special precaution for preservation need be taken in this respect.

Therapeutic Effect of Vitamin B_1 in Abdominal Surgery.—Murakami and Utagawa record instances of acute generalized peritonitis in which there was evidence of secondary avitaminosis B_1. The injections of large doses (10-50 mg.) of vitamin B_1 caused the cessation of vomiting and the resumption of normal peristaltic movements of the intestine. In order to study this effect further the authors carried out a series of experimental observations in rabbits, from which the following conclusions were reached: 1. Vitamin B_1 has a markedly beneficial effect in the treatment of intestinal paresis due to peritonitis or following abdominal surgery. 2. This effect, as seen in clinical as well as in experimental subjects, is due to the action of vitamin B_1 in the restoration of normal peristalsis and the alleviation of muscular atony of the intestinal walls. 3. The effective dose of the vitamin in the treatment of intestinal paresis varies, according to the condition of the patient, from 2 to 50 mg. injected intravenously and repeated every four hours. 4. The clinically demonstrable effect appears within thirty minutes after the injection and continues for approximately four hours. 5. There is a synergistic action of vitamin B_1 for a prostigmine preparation, since the combination treatment of these substances prolongs the duration of intestinal peristalsis and of normal tonus for seven hours, instead of but four hours with the use of vitamin B_1 alone.

Ugeskrift for Læger, Copenhagen

102:1187-1216 (Nov. 14) 1940

Ureter Calculi: Brief Review. H. K. Lassen.—p. 1187.
*Ureterolithiasis and Its Treatment. K. Østerbye.—p. 1189.
*Treatment of Ureteral Calculi. S. Moring.—p. 1194.

Ureterolithiasis and Its Treatment.—Østerbye reports ureterolithiasis, all unilateral, in 83 men and 30 women aged mainly between 20 and 45. Ureterolithotomy was done in only 8 cases, electroincision of the orifice in 1, 75 received purely expectant treatment and 20 expectant treatment together with dilation according to Böhringer. Passage of the stone was observed or roentgenologically established in 53 (70.7 per cent) of the 75 cases and in 15 (75 per cent) of the 20. There was macroscopic hematuria in 30.4 per cent of the cases and microscopic hematuria in 64.6 per cent. The difference between ureteral and renal calculus is stressed. The author says that ureteral calculus occurs most often in men between 25 and 30 and is almost always unilateral, with sterile urine. Spontaneous passage of the calculus occurs in between 75 and 80 per cent of the cases. The concrements are small and mostly composed of calcium oxalate. Recurrence is seen in about 20 per cent of the cases, but between the attacks the patients are perfectly well. Infection and renal injury are rare. In most cases the prognosis is good.

Treatment of Ureteral Calculi.—Moring's material comprises 140 cases of ureteral calculus, only 6 of them bilateral, in 93 men with an average age of 38, 45 women with an average age of 36, and 2 children aged respectively 10 and 4. Twelve patients (9 per cent) had to be treated operatively, 6 primarily, 6 after unsuccessful endovesical manipulations. In 98 cases (70 per cent) endovesical treatment was given, namely attempts at removal of the stone by Böhringer's forceps or Svend Hansen's instrument, or catheterization with injection of sterile oil or glycerin and dilation or electrocoagulation of the ureteral orifice. The author states that no complications set in which would contraindicate endovesical intervention. There were immediate or almost immediate results in 41 cases, including a number with symptoms of long standing. In 10 cases the stone did not pass until some time after the treatment. Spontaneous passage occurred in 21 cases, practically all with symptoms of only short duration. In some of the cases treated the calculus might have passed spontaneously, but it seemed reasonable to use an apparently safe method in order to shorten what might have become a longer course. As far as possible after-examination after from one half to five years was made of the patients discharged with the expectation that the stone would pass, and in most cases the symptoms had disappeared and the stone previously established could not be found, although few of the patients had noticed its passage. Only 2 cases had become complicated with a graver hydronephrosis.

THE STUDENT SECTION

of the

Journal of the American Medical Association

Devoted to the Educational Interests and Welfare of Medical Students, Interns and Residents in Hospitals

SATURDAY, MAY 3, 1941

Undergraduate and Graduate Medical Education for Negroes

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During the year 1930-1931 there were 21,597 medical students enrolled in the seventy-seven class A medical schools in the United States.[1] In twenty-five of these schools, at that time, there were 497 Negro medical students with by far the largest number attending Howard University Medical School and Meharry Medical College.

It is of interest that in the early years of the depression there was an actual increase in the total number of all medical students to a peak enrolment of 22,888 in 1934-1935. This upward trend was not reflected in the number of Negro medical students, as they had decreased to 402 at that time. It would seem that in these early depression years many college students who might normally have gone into selling stocks, bonds, real estate or similar fields of activity saw little or no opportunity there and turned their efforts to premedical and medical training. Negro students, hit more heavily by economic factors, had no funds to seek even this avenue of professional refuge and could not meet the financial demands of premedical and medical training. As a matter of fact, this was the general trend in all Negro professional groups during this period.[2]

From 1934-1935 there was a gradual decrease in the total number of medical students in this country to 21,291 in 1939-1940 (chart 1). Compared to 1930-1931 this represents a decrease of 3.1 per cent over the entire period. However, the enrolment of Negro medical students continued to fall steadily to a low of 350 in 1938-1939 (chart 2), a decrease of approximately 30 per cent compared to the 1930-1931 level. The greatest single factor in this steady decline has been the slower economic recovery of the Negro group as a whole. Depression hit the Negro early and severely, and recovery has been proportionately slow. Incidentally, in years past it has been possible for Negro students to obtain remunerative work as Pullman porters, waiters and at similar tasks during the summer vacation months. During these periods many students could accumulate funds to return and assume the obligations of another year of medical training. These formerly lucrative positions became more and more difficult to obtain during depression years and, although the situation has been better during the past year or two, they are still more difficult to obtain than formerly.

As indicated previously, in 1938-1939 there were 350 Negro medical students enrolled in twenty-five class A medical schools in the United States. Forty-five (12.86 per cent) were distributed among twenty-three institutions. The remaining 87.4 per cent were enrolled at Meharry Medical College (183, or 52.29 per cent) and Howard University School of Medicine (122, or 34.85 per cent, chart 3). The latter two schools of medicine engaged in training Negro youth are therefore confronted with the tremendous responsibility and challenge of furnishing adequate opportunities for thoroughly sound undergraduate training for approximately nine tenths of the Negro medical students now studying in our American medical schools. Howard University, though technically a private institution, derives nearly three fourths of its income from the federal government. Probably no other nonmilitary institution of higher education in the nation receives so large a proportion of its income from federal government funds.[3] Meharry Medical College is strictly a private institution and derives no support from the federal government. Both institutions have adequate physical plants and teaching hospitals. Both have endeavored to develop good faculties. As a matter of fact the preclinical departments of both institutions are staffed by thoroughly competent Negroes whose

Read before the Thirty-Seventh Annual Congress on Medical Education and Licensure, Chicago, Feb. 17, 1941.

1. Medical Education in the United States and Canada: Thirty-Ninth Annual Presentation of Educational Data by the Council on Medical Education and Hospitals of the American Medical Association, J. A. M. A. **113**: 757-860 (Aug. 26) 1939.

2. Lewis, Hylan G.: The Negro Business, Professional and White Collar Worker, J. Negro Education **8**: 430-445 (July) 1939.

3. Wilkerson, Doxey A.: Special Problems of Negro Education, Washington, U. S. Government Printing Office.

training in their respective fields has been obtained in the outstanding medical educational centers in the United States and Canada. Building strong clinical faculties has been more

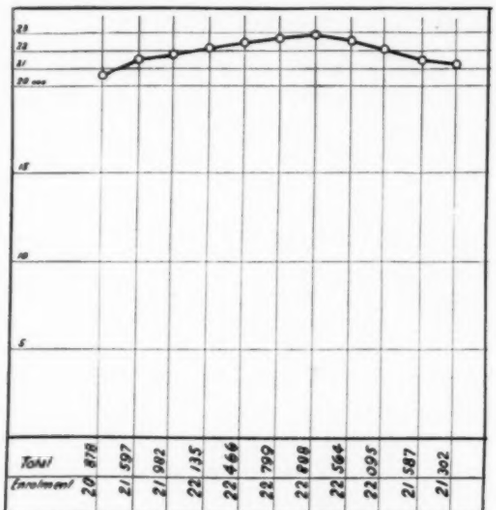

Chart 1.—Total enrolment of medical students in seventy-seven United States medical schools, 1928-1938.

difficult, but gradually capable Negro physicians have been sent on fellowships granted by certain foundations and have received excellent training. The clinical faculty at Meharry Medi-

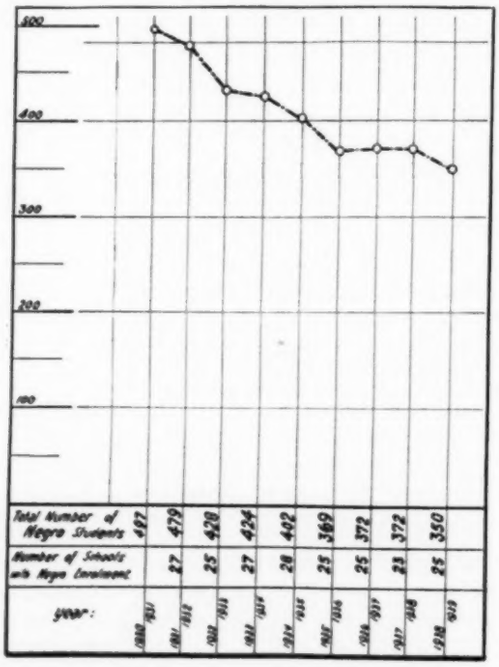

Chart 2.—Registration of Negro medical students in United States medical schools, 1930-1938.

cal College at the present time is a mixed group with a large number of excellent white physicians and surgeons cooperating with the Negro staff in developing a good clinical experience for the medical students. Thus, every effort is being made to offer thoroughly satisfactory opportunities for carefully selected groups of students in these two institutions.

Until relatively recently the premedical training offered the students in a number of the small Negro colleges was inadequate. Numerous small sectarian institutions were not equipped with the physical facilities to conduct proper scientific courses, and in many instances the faculties were not adequately prepared to teach certain subjects. Undoubtedly, in some cases, college degrees were being bestowed on students for work that could hardly have passed good high school standards. This criticism was equally applicable to a number of small sectarian white schools. The development of accrediting organizations for rating colleges has been one of the greatest forward steps that have ever been taken in stimulating many of these institutions to do more acceptable work. Relatively few Negro colleges have as yet attained class A rating, but those which have succeeded in doing so are conducting work that compares favorably with that of our best institutions. Other schools not so rated are finding it necessary to build stronger faculties so as to improve their teaching programs. The result of these efforts to attain satisfactory ratings has brought about appreciable improvement in the preparation of Negro premedical students. Although the same problems existed in many of the small sectarian schools for white students, a relatively larger proportion of Negro students had to attend schools of this type to receive an education, and they have consequently played a more vital role with the Negro group. The development of good state institutions for Negroes during the past few years in parts of the South has also made it necessary that the private colleges in these regions either offer something fully as good or better, or else face the possibility of having to close their doors.

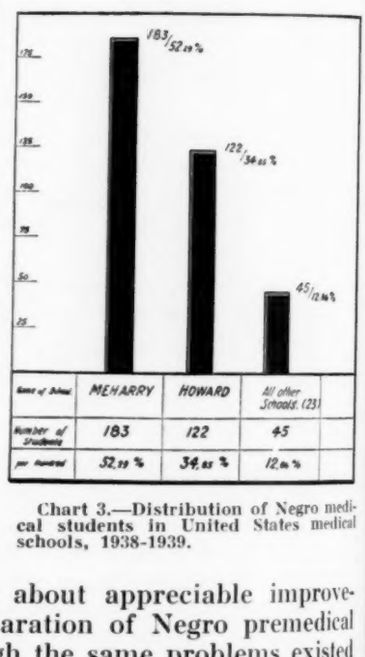

Chart 3.—Distribution of Negro medical students in United States medical schools, 1938-1939.

In 1927, the first year for which statistics are available regarding internships for Negro physicians, there were more Negro physicians graduating than there were internships available.[4] One hundred and nineteen Negro phy-

4. Bousfield, M. O.: Internships, Residencies and Postgraduate Training, J. Nat. M. A. 32: 24-30 (Jan.) 1940.

sicians graduated from eleven medical schools in 1927. Only seventy-one (60 per cent) were able to serve internships. Twelve hospitals for Negroes providing sixty-eight internships were approved for internships at that time (table 1).

TABLE 1.—*Approved Hospitals for Negroes, with Number of Beds and Number of Internships, 1927*

Hospital	Beds	Interns
Flint Goodridge, New Orleans	68	3
Freedmen's, Washington, D. C.	268	24
Kansas City General No. 2, Kansas City, Mo.	175	8
George W. Hubbard (Meharry), Nashville, Tenn.	130	5
Harlem, New York	348	5
John A. Andrew Memorial, Tuskegee, Ala.	75	3
John D. Archbold, Thomasville, Ga.	103	1
Lincoln, Durham, N. C.	98	2
Mercy, Philadelphia	90	4
Provident, Chicago	58	2
St. Agnes, Raleigh, N. C.	90	3
St. Louis General No. 2, St. Louis	385	8
Totals	1888	68

From Negro Hospitals, Julius Rosenwald Fund, 1931: Adapted from Bousfield.[4]

Since 1927 the situation regarding the number of graduating Negro physicians and the internships available has materially changed. In the last approved list of the American College of Surgeons[5] there were twenty-two fully approved Negro hospitals. Five hospitals are listed as provisionally approved. Only thirteen of these twenty-seven hospitals are approved for training interns by the Council on Medical Education and Hospitals of the American Medical Association. There were ninety-two internships available in nine of the thirteen hospitals in this approved group (table 2). Additional excellent internships for Negro physicians are available in certain hospitals not listed as being specifically for Negroes. These are usually classified as city or county hospitals and include such institutions as Harlem Hospital in New York, Los Angeles County Hospital and Cleveland City Hospital, where Negro physicians either have served or are serving as house officers. The total number of satisfactory internships for Negro physicians in fully accredited hospitals is approximately one hundred and fifty. In the remaining Negro hospitals on the approved list of the American College of Surgeons but not approved for internship by the Council on Medical Education and Hospitals of the American Medical Association there are additional needs for sixteen interns.[6]

But in the meantime, while the total number of the approved internships for Negro physicians has increased, there has been a persistent decline in the number of Negro physicians available. Thus, in 1938-1939 there were only sixty-nine Negro physicians graduated from American medical schools. At the present time it is difficult for hospitals fully approved by the Council on Medical Education and Hospitals of the American Medical Association to obtain a sufficient number of interns and it has become practically impossible for nonapproved hospitals to obtain house officers. At least one very valuable thing has resulted from this need for more Negro graduates, for it has clearly been shown that the nonapproved and nonaccredited institution which can offer nothing but room, board and a lot of hard work with no supervision has no attraction for the young physician. Certainly hospitals that cannot offer reasonable educational opportunities for interns should not pretend that they have internships available. Institutions of this type may have some attraction for men who have finished at least a year of internship and possibly a resi-

TABLE 2.—*Negro Hospitals Approved by the American College of Surgeons, October 1940*

Name of Hospital	City and State	No. Beds	No. Interns
Veterans Administration	Tuskegee, Ala.	1,408	..
John A. Andrew Memorial	Tuskegee, Ala.	70	..
Brewster	Jacksonville, Fla.	75	..
Clara Frye Tampa Mun. Negro	Tampa, Fla.	72	..
†Charity	Savannah, Ga.	55	..
‡Provident	Chicago	194	7
‡Flint Goodridge	New Orleans	100	..
‡Provident	Baltimore	138	6
†Edyth K. Thomas Memorial	Detroit	143	..
‡Parkside	Detroit	64	..
Trinity	Detroit	115	..
†Sidney A. Sumby Memorial	River Rouge, Mich.	35	..
‡Kansas City General No. 2	Kansas City, Mo.	274	12
‡Wheatley-Provident	Kansas City, Mo.	53	..
‡Homer G. Phillips	St. Louis	738	30
Peoples	St. Louis	50	..
Community	Newark, N. J.	30	..
‡Lincoln Memorial	Dunham, N. C.	103	4
†L. Richardson Memorial	Greensboro, N. C.	68	..
‡St. Agnes	Raleigh, N. C.	100	..
‡Kate Bittings Memorial	Winston-Salem, N. C.	130	4
‡Mercy Hospital	Philadelphia	115	5
‡George W. Hubbard	Nashville, Tenn.	183	8
†Whittaker Memorial	Newport News, Va.	50	..
Norfolk Community	Norfolk, Va.	64	..
Burrell Memorial	Roanoke, Va.	44	..
‡Freedmen's	Washington, D. C.	406	16
		4,877	92

Note: There are 2,281 beds in the 9 hospitals listed as training interns.

Total number listed for approval.... 27
Total number fully approved..... 22
†Total number provisionally approved 5
‡Total number approved for residency and intern training..... 13

Source, Approval Number, Bulletin of American College of Surgeons.[5]

TABLE 3.—*Residencies Available for Negro Physicians, 1939*

Bousfield: Commission on Medical Education and Hospitals of the National Medical Association, Aug. 9, 1939.

Hospital	Medicine	Surgery	Pediatrics	Obstetrics-Gynecology	Obstetrics	Pathology	Radiology	Gynecology
Freedmen's	1	1	1	1	..	..	..	..
George W. Hubbard	1	1	1	1	..	..	..	..
Harlem	..	2	1	..	1	2	..	2
Homer G. Phillips	1	1	..	..	..	..	..	..
Provident, Baltimore	1	1	..	..	1	..	..	..
Provident, Chicago	1	4	1	..	1	1	1	..
St. Mary's Infirmary	1	1	..	1	..	..	..	..
Wheatley-Provident	..	..	1	..	..	..	..	..
Total	6	11	5	3	3	3	1	2

Total Residencies — 34

5. Approval Number, Bull. Am. Coll. Surgeons, **25**: 269-712 (Oct.) 1940.

6. Information obtained directly from hospital administrators, January 1941.

dency, who are willing to serve as well paid house physicians for one or more years before entering practice themselves.

The young Negro physician is more and more desirous of continuing hospital experience beyond the internship. Far more young men and women now apply for residencies than there are residencies available. In his report for the Commission on Medical Education and Hospital of the National Medical Association in 1939, Bousfield [4] lists thirty-four residencies available for Negro physicians (table 3). With the development of the new tuberculosis unit in connection with the Freedmen's Hospital in Washington, D. C., new residencies in tuberculosis will be opened to Negro physicians. Four residencies are available at Flint Goodridge Hospital in New Orleans, and new residencies are just being developed in connection with the K. B. Reynolds Memorial Hospital in Winston-Salem, N. C. Thus, opportunities for prolonged hospital experiences are increasing for Negro physicians.

One of the institutions offering great potentialities for advanced hospital experience for Negro physicians is the magnificent Homer G. Phillips City Hospital in St. Louis, where a program incorporated with the Washington University School of Medicine is being conducted. Neurology and psychiatry are now being developed in this institution in a way that will offer splendid opportunity in that field. The possibility of special training in ophthalmology, orthopedic surgery and similar special lines is almost nonexistent in the present group of hospitals where Negro physicians are being trained.

With more and more Negro physicians desiring hospital training in the form of residencies, it is obvious that the opportunities now available are inadequate.

In the past the large majority of physicians, once having entered into practice, ended their educational career. A few outstanding, sincere and ambitious individuals managed to obtain some postgraduate experience. In certain areas in the United States there has been no opportunity for the Negro physician to gather with his white colleagues in the city, county or state meetings. The Negro physician was, and still is to a large extent, dependent on himself entirely when he begins his practice.

Fortunately, during the past several years in areas where there have been several Negro physicians within reasonable distance medical organizations have been created. Some of the Negro city and state medical organizations in the South are now developing into thoroughly creditable medical societies. I can speak of at least two of these Negro state medical societies which I had the privilege of attending during the past year. The Mississippi State Medical Society met in Vicksburg last April. Most of the Negro physicians in the state of Mississippi attended. The material presented was of excellent quality and the discussions which took place were as interesting and profitable as I have heard in many other medical organizations. The Volunteer State Medical Society, which is the Tennessee Negro medical society, met at Meharry Medical College in Nashville last June. This meeting was well attended by the Negro physicians of the state. The papers and discussions during the three day session would have been a credit to any state medical organization in the country. The Mound City Medical Society of St. Louis is also an active organization interested in the educational advancement of Negro physicians, and annual meetings have been well planned and very profitable.

In South Carolina, North Carolina, Georgia, Louisiana, Florida, Texas and Kentucky there are also groups of Negro physicians getting together annually for short medical conferences and clinics. A number of the faculty members from Howard University and Meharry Medical College have taken active part in these clinics and in the presentation of papers.

Where good hospital facilities are available, special courses are now being offered for Negro physicians. These vary from a few days to two weeks or longer. Some of these are simply refresher courses, some are adapted to summarize recent developments in diagnosis and therapy, and some are being directed in certain fields such as tuberculosis, venereal disease, pediatrics and maternal health. The splendid cooperation of white and Negro physicians in many of these centers is bringing excellent opportunities to the Negro physician in general practice. This is especially true at St. Phillips Hospital, sponsored by the Medical College of Virginia, at Flint Goodridge Hospital in New Orleans, where staff members from both Tulane and Louisiana State University School of Medicine give assistance, at Freedmen's Hospital in Washington, D. C., at George W. Hubbard Hospital of Meharry Medical College in Nashville, at Homer G. Phillips Hospital in St. Louis, at Provident Hospital in Baltimore and at Provident Hospital in Chicago.

We as medical educators are fully aware that there are no first, second and third rate ways of teaching medicine. If it is to be taught at all, it must be taught properly. During his course in medical school and his subsequent training in the hospital, the medical student and the young physician must ignite that spark which is going to make him a student the rest of his life. He needs to keep in contact with medical progress as long as he lives. He must take his medical

journals and, above all, he must read them. He should have the opportunity of getting in touch with his fellow colleagues and comparing his experience with theirs. He must learn that he can never let down. He should have affiliation with his city, county and state medical society associations. He should be a Fellow of the American Medical Association and get THE JOURNAL weekly. Spare minutes spent with THE JOURNAL bring him a wealth of up to the minute information.

These are all factors that help to keep physicians on their toes.

The Negro physician is expected to face the same medical course as any other student, he is required to pass the same state board examinations, he is expected to abide by the same laws, pay his taxes in accordance with his ability, and in general, play the role demanded of any decent citizen and well trained practitioner of medicine. The Negro physician needs every possible opportunity to keep in touch with medical progress. The American Medical Association through its Fellowship and THE JOURNAL offers, it seems to me, the best means for the average physician to keep abreast of medical trends. It is my sincere hope that, in those regions of our country where Negro physicians are still denied the right of Fellowship in the American Medical Association, careful study be given to the possibility of developing plans for the recognition of Negro medical organizations so that this opportunity for continuous education through THE JOURNAL and the Association may also be extended to them. In the end, it will mean better medicine, better cooperation and a truly worth while improvement in the care of the Negro physician for his patient.

SUMMARY

1. In 1938-1939, 1.64 per cent of the medical students in the United States were Negroes.

2. Eighty-seven per cent of the Negro students enrolled in the United States study at Howard University and Meharry Medical College.

3. The enrolment of Negro medical students had shown a continuous decrease from 1930-1939 with a slight forward trend during the past year.

4. Prior to 1930 the opportunities for internship for Negro physicians in accredited hospitals were not sufficient to care for the annual graduating group.

5. Since 1930 there has been an increase in the number of internships available for graduates in accredited hospitals, so that there are now more good internships available than there are graduates to fill them.

6. The number of residencies for Negro physicians, although increasing, does not begin to meet the demand for continued hospital training.

7. Opportunities for graduate training for Negro physicians are gradually increasing.

8. Negro medical societies are being organized, and carefully planned programs are being developed.

9. Cooperation between white and Negro physicians in many parts of the South is an important factor in the improvement of opportunities for the continuation of study for Negro physicians.

10. It is desirable that affiliations be developed between white and Negro medical societies in certain parts of the South which will permit Negro physicians to become active members of the American Medical Association.

Digests and Reviews

THE ART OF SURGERY

Condensation of address by Dr. Elliott C. Cutler, Moseley professor of surgery, Harvard Medical School, Oct. 3, 1940, before the North Side Branch of the Chicago Medical Society and published in the Aesculapian, November 1940.

I teach pupils that the principles of surgery are simple and few, that they consist in anesthesia, hemostasis and asepsis. The surgeon who practices to the fullest these three principles will have accomplished all the essentials for a perfect surgical undertaking, for if the patient does not bleed or suffer pain or become infected the surgeon may pass from one cavity of the body to another and the patient will recover without untoward event. It is a sad commentary on the ability of the human mind to absorb education that it takes six to eight years to learn even the rudiments of these principles.

Can one have perfect hemostasis in a fifteen minute procedure? Can one be gentle to each little cell in that period of time? Doesn't the surgeon know that a wide-mouthed hemostatic clamp in a piece of tissue will kill a thousand cells and leave a slough in the wound? Can he not envisage the effects of dry gauze on these cells, each one but a tiny drop of water? The choice of a safe anesthetic, suited to the disorder and the physiologic reactions of the individual patient, will obviate speed in operating.

Hemostasis can be accomplished only by the proper use of hemostats. They must be finely pointed so that only a minimum of tissue is crushed. They are better properly placed on a vessel before it is cut in order that tissue juices may not enter the open mouthed vessel and encourage thrombosis. If a large vein is exposed with a tributary in it, the tributary vein must be closed close to the major vessel lest there

be a pool of blood in a vein through which the current does not pass and in which thrombosis again is a peril. And when important vessels are tied in difficult areas it is not sufficient to tie the vessel alone, but the tissue near it must be first transfixed with a needle lest the ligature slip and a catastrophe occur.

Blood must not be lost or else we will hear all this nonsense about giving a patient a transfusion following a surgical operation. Transfusions following surgical procedures are but a commentary on the type of surgery performed, except in those conditions in which the disease itself requires transfusion. And those who have to use transfusions to get through their daily surgical tasks should be honest with themselves and their patients and take up some other line of work.

Asepsis is a knottier problem. The surgeon is late and the scrubbing of his hands is hurried. Or an instrument is dropped on the floor and he berates the nurse until she brings him back his pet instrument improperly sterilized. Or he has a coryza, and rather than put off the procedure he takes a chance.

What surgeon knows fully the working of the steam autoclave? If it breaks down, he tells his head nurse to fix it. She summons the hospital superintendent, who sends a plumber and the matter is patched up. Is the autoclave now competent? Has he inserted cultures to see whether the material is killed within the proper time limits? There must be some one in each hospital who understands these machines. They must be tested from time to time. The steam supply must be adequate. All air must be evacuated if sterilization by steam is to be satisfactory. If the machine functions perfectly there is no safeguard against the busy nurse. There must be strict discipline to ensure that materials remain in the sterilizer a proper length of time.

Spore-forming organisms are not killed in the ordinary autoclave. Contamination is here prevented by making every effort to have materials free of spore bearers when they enter the autoclave. All instruments used in operations on the intestinal tract are potentially infected with sporular organisms. Such instruments immediately after use should be submitted to special sterilization at high pressure. When cleaned, oil must not be used in the joints, for bacteria to be killed by steam or boiling must be wet. A spore suspended in a drop of oil is not damaged by boiling water, since it cannot be wetted. This is an important detail and surgeons should look to their own instruments when gas infection occurs following a surgical ordeal.

BACKGROUND OF THE SURGEON

The surgeon must be a pathologist and preferably a microscopist. Thus, the background of the surgeon must be broad and thorough. This means graduation from a competent medical school and somewhere between five and eight years' postgraduate training under a competent master, and this time is better spent for the most part under a single master. One of the pathetic observations made by teachers is the wandering from clinic to clinic of a great group of young men. They stay long enough in one place to learn a smattering of what is going on and leave just when their chief is getting to know them and about the time his guidance might be of supreme importance to them. The technics in the different clinics vary. The young surgeon should not try to learn a lot of different technics. Learn one completely and well, and the results will be good. If the education of the surgeon is such that he has been taught to use only his hands, if he has gone steadily from one clinical post to another without a breathing space in which to use his brain, he will become in time an artisan, not an artist.

This is part of the price which all pay who must conduct a technical career. Consider a young surgeon interning. Urgent necessity motivates his every move. He must give an anesthetic, set a fracture, go around with the chief, do a white count, in all of which there is a minimum of intellectual endeavor. He doesn't think what to do; he merely learns how to do it. Instead of synthesizing ideas, he spends his time memorizing. This is a low form of intellectual endeavor and, if continued for a long time, will lead to deterioration of the higher intellectual faculties.

This type of artisan surgery is common among surgeons. Such operators do good by improving technical methods, but on the whole their outlook is narrow. If they find gallstones in a roentgenogram they are prone to think that they should come right out, not realizing that many people live to old age with no symptoms of biliary disease and yet at autopsy the gallbladder is found choked with stones. The man brought up in this type of surgery rushes from place to place, removing items from the human body when thoughtfulness might obviate much of this. We have to fight against this in the education of the young surgeon. From time to time the young surgeon must be given a problem and work away from the clinic. He must be encouraged to travel to see other surgeons work that he may speculate more, not on how the task is to be done, but on whether it is worth doing. What is important for the young doctor to learn is how to use his mind, how to make observations, and how to add these observations together and synthesize a new idea. That is education, not information.

INTERNSHIP OF HARVEY CUSHING

My former chief, the late Harvey Cushing, often told this story: He began his internship at the Massachusetts General Hospital when

J. C. Warren was chief of the hospital. True to the tradition of that day, Dr. Warren operated with great speed, and young Cushing was greatly impressed. Cushing then went to Baltimore to work under William Halsted. He was not allowed in the operating room his first day there, though a patient from his ward went to be operated on. With misgiving, young Cushing watched three hours go by, while the great master took such exquisite care with each cell that there would be no injury to the patient. Finally, when the patient returned to the ward, Cushing was ready with the customary medication that he had been ordered to give when at the Massachusetts General Hospital. When he was about to administer these medicaments, Dr. Halsted entered the ward. Dr. Cushing said, "I am carrying out the usual procedure." Dr. Halsted said, "Is my patient ill? That is unusual. Let us examine her." Examination revealed normal pulse rate and normal respiration. "What is in the syringe?"

"Strychnine" said Cushing.

"What do you think strychnine will do for the patient?"

Having been educated where memory and orders were the rule, Cushing did not know. He was informed by Dr. Halsted that he should read up on strychnine. "If your reading convinces you that strychnine is good for the patient by all means use it," said Halsted.

Surgery is both an art and a science, and the art can be learned only by the first method of education, that of apprenticeship. When we see the trained surgeon working with perfect regard for anesthesia, hemostasis and asepsis, we really see an artist. He treats his instruments as a painter treats his brushes or a violinist his bow. He uses nicely balanced instruments. He is neat in his technic. His wound is never full of blood. The tissues are treated gently. No cell dies through roughness on his part.

The fullest expression of the use of one's hands may be seen in the ritual of a great surgical procedure. There is strict discipline, precision, gentleness, beauty. The performance of such a task requires more than craftmanship. It is the use of the hands dictated by a trained intelligence.

Comments

BANTING WAS ORDERED BACK

Frederick G. Banting began his course in medicine at the University of Toronto Medical School in 1912. When a junior in medical school in 1915 he enlisted as a private in the Canadian army. Banting was ordered back to school to finish his university training, graduating in 1916. He at once joined the Canadian Army Medical Corps and was wounded at Cambrai in France in September 1918. He was awarded the Military Cross for valorous conduct during the Cambrai engagement. In 1920 he was resident surgeon in the Hospital for Sick Children in Toronto; then he moved to London, Ontario, as research assistant in the department of physiology of the University of Western Ontario for the session of 1920-1921 and soon thereafter began the research which led to the discovery of insulin, for which he was awarded the Nobel Prize in Medicine, along with Prof. J. J. R. Macleod, in 1923.

According to Dr. Charles H. Best in the *Canadian Medical Association Journal,* April 1941, Banting had a definite philosophy of life, which he once expressed in the following words:

> It is not within the power of the properly constructed human mind to be satisfied. Progress would cease if this were the case. The greatest joy in life is to accomplish. It is the getting, not the having. It is the giving, not the keeping. I am a firm believer in the theory that you can do or be anything that you wish in this world, within reason, if you are prepared to make the sacrifices, think and work hard enough and long enough.

TO STUDY EFFECTIVELY

"Against the college of liberal arts must be charged the complaint that too many of its graduates do not know how to read understandingly, to write straightforwardly and to study effectively. Reading has apparently been done largely in a skimming fashion with the sole intent of extracting the gist of thought. Many beginning students find it a wholly new experience to read closely knit text-matter, in which each word and punctuation mark carries definite significance. Within a week or two the medical tyro learns to his dismay that reading and rereading an assignment is not highly profitable unless he has pondered and digested the facts at hand, has arranged these facts in orderly sequence, has fixed their architectural framework in a vivid memory pattern, and has integrated the raw facts and his previous store of basic information into a significant mosaic. Here the instructor must continuously preach the wisdom of imbibing word upon word, line upon line, precept upon precept. . . .

"To study efficiently and to budget time proportionately is the earmark of a superior student. This is admittedly a by-product of previous training, but of greater weight is the fact that proficiency comes only when an individual is innately well endowed. An instructor rarely feels more impotent than when an earnest but dull student confides that all his difficulties trace to not knowing 'how to study' and

innocently requests the magic secret. If we are candid with ourselves we must admit that a certain fraction of our student body is uninspired and lacking in fundamental scholarly instincts.

"These students never can attain a high degree of understanding, let their spark of ambition glow as brightly as it may. To be sure, we can supply some rather obvious practical hints, but we cannot hope to prevail against a defective germinal legacy. Neither can an adequate reply be made to such a common request as 'how to know what is important and what is not.' The mere fact that such a query is made reveals at once the ingenuousness of the inquirer and his lack of understanding of his own incapacities. . . .

"Strong students from small colleges have to learn by test that they need ask no handicap in the race for preferment. Weaker, though eager, students from the same type of school may be shocked into the realization that they cannot hope to ride so high as formerly in the stiffer competition now faced. Conversely, there is often a pleasant surprise in store for the students from the more exacting large universities; they frequently find themselves surpassing their previous relative standings. Possibly this is due to a more careful appraisal of merit; possibly it is a reaction to more intimate contact with those in charge of courses. Still another experience in revaluation comes to the student of potential ability who squandered much of his energies in campus activities, athletic and otherwise. Freed from these distractions, innate capacities can begin to yield concrete scholastic rewards. So it is that the first quarter in medical school turns into a proving period in which strangers become acquainted with each other, with new working conditions and with new standards. Not until the end of that quarter do they begin to know what order of success they have achieved. Moreover, for many the period of adjustment does not reach a conclusion at this time. Deflation, humiliation and discouragement are the necessary lot of many. For these the winter quarter looms as a probationary period in which the recapture of moderate success or the recouping of personal prestige must be accomplished. The teacher's role during these quarters is a serious and important responsibility."—Arey, L. B.: Lo, the Poor Freshman! *Quart. Bull. Northwestern Univ. Med. School,* Spring Quarter, 1941.

DO YOU KNOW WHAT PHYSICIAN—

1. Was a close friend and attendant to Emperor Napoleon?

2. First discovered that the anopheles mosquito is a vector of malaria fever?

3. Founded the U. S. Army Medical Library, which is the largest medical library in the world?

4. Established the U. S. Army Medical Museum?

The answers are on page 2120.

Medical College News

Medical schools, hospitals and individuals will confer a favor by sending to these headquarters original contributions, reviews and news items for consideration for publication in the Student Section.

British Medical Students to Study in the United States

The president of the Rockefeller Foundation, Raymond B. Fosdick, announced, March 17, that the foundation had appropriated $100,000 to initiate a plan of bringing young British medical students to the United States in order that they may complete their medical education here. Unless unforseen difficulties arise it is anticipated that some British students will arrive in America this spring and the balance by the fall term of school. The German air raids on London and elsewhere in Great Britain have destroyed teaching hospitals and medical schools to the extent that at this time only one teaching hospital in London has escaped bombing. Twenty-five medical schools in the United States and Canada have indicated their willingness to accept British students and some have offered to remit the tuition. Lord Lothian, British ambassador to the United States, asked the Rockefeller Foundation shortly before he died whether it would consider the possibility of giving a number of British medical students the opportunity to complete their training. The suggestion was warmly supported by leading British medical authorities.

Sigma Xi Alumni Research Fund

With a small gift from the National Research Council and contributions from a few alumni, the Society of the Sigma Xi Alumni Research Fund for Grants-in-Aid was founded in 1920. At the time of its founding the movement was presented to the entire body of alumni and every year since the opportunity to contribute to this fund has been presented. Since 1936 the society has added to the contributions received the income from permanent funds. During the twenty years of operation of the fund, $36,800 has been distributed to 134 applicants. The grants are distributed in small amounts to as large a number of research workers as possible, and they may be used to cover the purchase of new apparatus, expenses for assistants, publication and the like. The Committee of Award at present comprises Gary N. Calkins of Columbia University; Harlow Shapley of Harvard University, and W. R. Whitney, vice president in charge of research of the General Electric Company, chairman. Last year $3,350 was distributed in fourteen awards. Contributions to this fund and applications for grants-in-aid should be made to the National Secretary, Society of the Sigma Xi, Yale Station, New Haven, Conn.

Harvard Changes Method of Conducting Examinations

According to the report of the dean, Dr. C. Sidney Burwell, for the year 1939-1940, Harvard Medical School, Boston, has made important changes in the method of conducting the fourth year general examinations. For the next two years, an experimental period established by the faculty, students will be permitted to offer the examinations given by the National Board of Medical Examiners in lieu of the written general examination now set by the Harvard Medical School. The oral examinations, which are given by the examination committee to students who are candidates for honors and those who are possible failures, will be conducted as in the past. This change is one of a series of experiments which have been made with this examination in the past years.

Professor Carlson Addresses Michigan Group

At the initiation of the honorary medical society Alpha Omega Alpha at the University of Michigan, Ann Arbor, Dec. 18, 1940, Dr. Anton J. Carlson, professor emeritus of physiology of the University of Chicago, gave an address on "Science versus Life." The following members of the senior class of the medical school at Michigan were made members of the organization at this time: Harford W. Friedman '41, Herman Harvey Gass '41, Gordon R. Harrod '41, Jack Lapides '41, Charles R. Lowe '41, Philip S. Peven '41, Daniel C. Siegel '41 and Robert F. Ziegler '41.

University of Georgia

A university music association is being organized at the University of Georgia School of Medicine, Augusta, for the purpose of advancing culture in the medical school and to make closer union with a parent school at Athens, Ga. Dr. Irvine Phinizy is chairman of this activity.

Five students were selected in the spring election for membership in Alpha Omega Alpha honorary fraternity: William H. Bonner, William S. Boyd, James M. Combs, William F. McKemie and Herman K. Moore. These men will be inducted May 7, at which time Henrik Dam, associate professor of biochemistry at the University of Copenhagen, will give an address on vitamin K.

Tufts New Chapter of Alpha Omega Alpha

Alpha Omega Alpha honorary medical fraternity, established in 1902 to encourage scholarship, installed its forty-fourth chapter at Tufts College Medical School, Boston, December 2. Dr. Hyman Morrison, clinical professor of medicine, was chairman of the faculty committee on arrangements. The following students, all members of the class of 1941, have been elected to this group: Carroll Bryant Jr., Carl J. Antonellis, George A. Dodge II, Clement S. Dwyer, Herbert F. Hager, Jesse G. Garber, Alfred Kant, Arthur N. Kelly, John L. O'Hara and Raymond Yesner. A dinner followed the installation ceremonies in Curtis Hall on Tufts Campus in Medford.

University of Virginia

Leonard J. Yamshon, junior in the University of Virginia Department of Medicine, Charlottesville, received the annual undergraduate award, a gold medal, by the Phi Lambda Kappa fraternity for a scientific thesis.—— The second Alpha Omega Alpha lecture of the year at the University of Virginia Department of Medicine was given February 7 by Dr. Isaac A. Bigger, professor of surgery, Medical College of Virginia, Richmond, on the ligation of large arteries.

Louisiana Fellows of Gorgas Society

At a meeting of the Agramonte chapter of the Gorgas Medical Society at Louisiana State University School of Medicine, New Orleans, the following students were approved as new fellows of the society: Hubert Chidester Ashman '43, Charles Richard Bates Jr. '43, Daniel Winston Beacham '43, Howard Albert Buechner '43, Norman Burnstein '43, Philip Louis Cenac '43, Thomas Madison Durham Jr. '43, Philip Borrello Johnson '43, Kay Kohara '43, Louis Levy '43, Douglas Lindsey '43 and George J. Zibilich '43.

This society, named after the late Dr. William Crawford Gorgas, was organized to foster and encourage the highest ideals in medical students. The first chapter was founded at the University of Alabama School of Medicine. In 1932 the Aristides Agramonte chapter was organized at Louisiana State University School of Medicine. Dr. Aristides Agramonte played a great role in the conquest of yellow fever and was the first professor of tropical medicine at Louisiana.

The Gorgas Medical Society is composed of all the members of the second year class in medicine. After the first semester of the second year, the heads of departments select candidates for the fellowships on the basis of scholarship, character and promise of research ability and leadership; the proceedings are secret. A sealed list of nominees is handed to the president of the society in open meeting, the seals are broken and the roster of candidates is disclosed to the society. After discussion in the absence of the candidates, the society votes by secret ballot on each candidate. Thus, each candidate is nominated by the faculty committee and is accepted or rejected by the students themselves. Each fellow is given a key. Fellowship in the Gorgas Society is one of the highest honors available to medical students at Louisiana. The Louisiana chapter and the Alabama chapter, which are affiliated, from time to time confer honorary fellowship on distinguished medical men. Following are some of the honorary fellows of the Gorgas Society: Drs. Rudolf Matas, Arno B. Luckhardt, Morris Fishbein, Carlos Finlay Jr. (Habana, Cuba) and Herbert C. Clark.

Time Off at Long Island

A newly decorated lounge for women students has been provided on the second floor of the Donnellon House at Long Island College of Medicine, Brooklyn. An official housewarming was held December 4, to which also a group of women prominent in hospital affairs in Brooklyn was invited. The guests were received by Mrs. Jean Curran, Mrs. Frederick L. Cranford, Mrs. Tracy Voorhees and Mrs. Raymond P. Sloan, who were assisted by the students who served as escorts to the new lounge. The room invites relaxation with its lounge chairs, two large windows, plenty of good lamps, a maple desk, pictures and other colorful accessories.

Utah

The students at the University of Utah School of Medicine, Salt Lake City, were addressed March 26-28 by Dr. Malcolm T. MacEachern, associate director of the American College of Surgeons, Chicago, on "Preparation for a Professional Career"; by Dr. Edward W. Alton Ochsner, New Orleans, on "Physical Diagnosis," and by Dr. Frank E. Adair, New York, on "The Cancer Problem." About one hundred applications for entrance to the first year class of the University of Utah School of Medicine for the school year 1941-1942 were received, and of these twenty-nine men and two women were accepted. Although applications were

received from all parts of the country, the students from outside Utah came mainly from the six neighboring states which have no medical schools.

Lectures at Minnesota

Dr. Arno B. Luckhardt, professor of physiology, University of Chicago, delivered the William Root Lecture, sponsored annually by the Alpha Omega Alpha medical fraternity, in the University of Minnesota Medical Amphitheater, Minneapolis, April 29, on "Dr. William Beaumont and the Medical Epoch of the Northwest Territory." A lecture was delivered at the medical school April 22 by Prof. Lucien Brouha, formerly of the University of Liége, Belgium, and now physiologist at Harvard University under the Grant Foundation. Professor Brouha discussed functions of the autonomic nervous system.

Texas

The students and faculty of the University of Texas Faculty of Medicine, Galveston, were addressed March 25 by Dr. Ernest von Brueke of Harvard Medical School, Boston, in the morning and evening on "Physiological Tendencies to Stabilize the Appearance of the Environment" and "Fatigue and Recovery in Peripheral Nerves" respectively. Dr. William R. Houston of Austin gave the annual Alpha Omega Alpha address April 8 and at the annual banquet the following junior students were initiated into this honorary fraternity: James Neal Walker, James H. Benton, Roy H. Baskin Jr., Alfred S. Frobese and Louis C. Floyd. The medical school has increased its clinical material by arranging to use the charity wards of St. Mary's Hospital for ward rounds.

Lectures at Columbia

Lancelot Hogben, F.R.S., regius professor of natural history at Aberdeen University, addressed the students and faculty at Columbia University College of Physicians and Surgeons, New York, February 18, on "Medical Genetics—Methods and Problems." On Dec. 17, 1940 Henrik Dam, associate professor of biochemistry at the University of Copenhagen, addressed the students and faculty on "Vitamin K—A General Survey of Its Biochemistry and Clinical Application."

West Virginia

The student body at West Virginia University School of Medicine, Morgantown, was addressed, March 14, by Lieut. Comdr. William M. Sheppe of the U. S. Naval Reserve on "The Medical Student and the Naval Reserve." The student body and the faculty were addressed at a special seminar, March 31, by Dr. William T. Lemmon, associate professor of surgery at Jefferson Medical College of Philadelphia, on continuous spinal anesthesia in surgical operations, followed by questions from the audience. In the evening Dr. Lemmon was guest of honor at a dinner given by the Monongalia County Medical Society.

Course in Applied Medicogenetics

The Woman's Medical College of Pennsylvania, Philadelphia, is offering this year a lecture course in "Applied Medicogenetics." The lectures are given on Fridays from 5 to 6 p. m. and are open to physicians and medical students. Clyde E. Keeler, fellow of the Wistar Institute, University of Pennsylvania; Charles B. Davenport, formerly director of the Station for Experimental Evolution and director of the Eugenics Record Office; Dr. Madge T. Macklin, assistant professor of anatomy, University of Western Ontario Medical School, and Frederich Osborn, president of the American Eugenics Society, are among the lecturers. Although a number of medical schools offer occasional lectures on this subject, this series of lectures, in continuation of a group presented last year, is believed to be the first symposium on this subject sponsored by a medical school in this country. The lectures outlined last year were printed in book form under the title "Medical Genetics and Eugenics."

Professor Hanzlik Addresses Wayne Students

The student body at Wayne University College of Medicine, Detroit, was addressed, February 22, by Dr. Paul J. Hanzlik, professor of pharmacology at Stanford University School of Medicine, San Francisco, on "The Stabilizing Power of Pharmacology." Dr. Hanzlik was introduced by one of his former students, Dr. Arnold J. Lehman, who is associate professor of pharmacology at Wayne University.

Wisconsin

The fourteenth annual William Snow Miller Lecture, sponsored by the University of Wisconsin chapter of Phi Beta Pi, was presented at Madison, March 13, by Dr. John H. Skavlem, assistant professor of medicine, University of Cincinnati College of Medicine. The topic was "Lest We Forget the Importance of William Snow Miller's Anatomical Contributions in Clinical Diseases of the Chest."——The Wisconsin chapter of Alpha Omega Alpha selected in December on the basis of scholarship and character the following new members: seniors—Leland E. Frederick, Ellen M. Sexton, Edward W. Shrigley and Harold C. Youngreen; juniors—Royden F. Collins, George C. Hank and Wallace G. Irwin.

"DO YOU KNOW WHAT PHYSICIAN"

Following are answers to the questions appearing on page 2118:

1. Dr. Jean Nicholas Corvisart, who was a great teacher and founder of modern clinical medicine in France. Corvisart's favorite pupil was Laënnec, and it has been said that his expertness in percussion stimulated Laënnec's invention of the stethoscope at the Hôpital Necker in 1816.

2. Sir Ronald Ross, of England, discovered in 1897 the Laveran plasmodia in the stomach wall of anopheles mosquitoes which had fed on the blood of malaria patients. He also proved that the spores of the parasites are concentrated in the salivary gland of the mosquito.

3. Dr. Joseph Lovell, who was also the first Surgeon General of the U. S. Army, under definitely planned legislative enactment. Dr. Lovell served through the war of 1812 and was Surgeon General of the Army from April 18, 1818 to Oct. 17, 1836, in which year he died. He was born in Massachusetts in 1788.

4. Surg. Gen. William A. Hammond, U. S. Army, established the Army Medical Museum in 1862. After the battle of Antietam, in 1862, the first curator of the museum, Dr. J. H. Brinton, was sent to Frederick, Md., and to other battlefields to collect specimens. During the World War a special unit was organized and sent to France to collect specimens for the museum. The identification of mosquitoes, flies and other insects infesting army camps was made a part of the regular work of the Army Medical Museum in October 1918. The museum is now the largest museum of human pathology in the United States. It is open to the public and is visited every year by thousands of people.

Book Notices

A Textbook of Clinical Neurology. By J. M. Nielsen, B.S., M.D., F.A.C.P., Associate Clinical Professor of Medicine (Neurology), University of Southern California, Los Angeles. Cloth. Price, $6.50. Pp. 672, with 179 illustrations. New York & London: Paul B. Hoeber, Inc., 1941.

This textbook is written primarily for the medical student so that he can follow daily assignments in class work. The description of the various conditions are clearly and briefly done. The reading of the text is unusually easy. There are twenty-four chapters, starting with diseases of the spinal nerves. Then there follow diseases of the peripheral nerves, spinal cord, cranial nerves, brain stem, cerebellum, thalamus and vegetative nervous system. Inflammations, intoxications, tumors, epilepsy, migraine, multiple sclerosis, trauma, diseases of the muscles follow. Finally there are chapters on mental deficiency, diseases of bone affecting the nervous system, avitaminosis, electroencephalography, psychoneuroses and addiction. Vitamins and avitaminosis are discussed in a sober way. Electroencephalography is likewise properly evaluated. This is a good textbook and is recommended to the medical student.

The 1940 Year Book of Radiology. Diagnosis. Edited by Charles A. Waters, M.D., Associate in Roentgenology, Johns Hopkins University, Baltimore. Associate Editor: Whitmer B. Firor, M.D., Assistant in Roentgenology, Johns Hopkins University. Therapeutics. Edited by Ira I. Kaplan, B.Sc., M.D., Director, Radiation Therapy Department, Bellevue Hospital, New York City. Cloth. Price, $5. Pp. 496, with 497 illustrations. Chicago: Year Book Publishers, Inc., 1940.

The 1940 Year Book of Radiology is the current issue of a series which has been published for several years. Since its first volume, the Year Book of Radiology has been recognized as a book which radiologists and other members of the medical profession who are anxious to keep abreast of radiologic progress have needed. It is now considered by many radiologists as an encyclopedia of radiologic information, since it presents a correlation of the best and latest achievements in the field of diagnostic roentgenology and radiation therapy. It is almost impossible, in so short a review, to give an adequate idea of its useful contents. Among the many practical new diagnostic procedures mentioned is a pelvic soft tissue study during pregnancy, making it possible, in certain instances, to diagnose cases of placenta praevia. A complete description of the apparatus used in fluorography is also given, with explanation of its use. This method of examination, while it may never replace roentgenograms of regular size, is of interest in mass examinations, such as are being done in the army. The section on the diagnostic use of the roentgen ray in nervous diseases, particularly benign and malignant brain tumors, reveals valuable information, the illustrations are well selected, and the whole is well worth reading.

Equally important is the portion devoted to therapy, which occupies a little more than half of the book. In this section may be found the physical technical factors and the results obtained in the treatment of cancer and other diseases amenable to radiation therapy according to modern methods as employed by leading radiologists of this and other countries. The treatment of gas gangrene, arthritis and para-arthritis, acute subacromial bursitis, the endocrine sympathetic system, amenorrhea and sterility, for example, are presented in a clear, understandable manner. Because of the manner in which the subject is presented, the radiation therapist is afforded the opportunity to obtain easily and quickly certain information regarding this form of therapy which would otherwise require some difficulty and time consuming search in arriving at similar information. It is more than a presentation of illustrated abstracts of the best current radiologic literature: it is a selection of interesting and important medical problems, calculated to have a practical use in the diagnosis and treatment of disease.

The book is replete with clear, interesting and important illustrations, printed on excellent paper. The type is clear and easy on the eye.

The editorial comments following many of the subjects constitute a valuable contribution to the book, and for all these reasons it should be in the library of every progressive radiologist.

Handbuch der Erbkrankheiten. Herausgegeben von Dr. Arthur Gütt, Staatssekretär a. D., SS.-Brigadeführer. Band VI: Die erbliche Taubheit und ihre Diagnostik. Von Dr. M. Schwarz, o. Professor und Vorstand der Universitäts-Ohren- und Hals-, Nasenklinik, Frankfurt a. M. Körperliche Missbildungen. Von Dr. Hellmut Eckhardt, Facharzt für Orthopädie, Geschäftsführer der Hauptabteilung II—Volksgesundheitspflege —des Reichsausschusses für Volksgesundheitsdienst und der Reichsarbeitsgemeinschaft zur Bekämpfung des Krüppeltums. Paper. Price, 24 marks. Pp. 373, with 222 illustrations. Leipzig: Georg Thieme, 1940.

This is the sixth volume of a handbook of hereditary diseases edited by Arthur Gütt, former state secretary of Germany in charge of institutions and measures for improvement of the German race and "SS.-Brigadeführer." For those who have not a more intimate knowledge of present Germany it may sound somewhat strange to read in the first sentences of Gütt's preface "Life is fight. . . . Germany has been forced to fight against her will by the British and French warmongers in 1939 as well as in 1914. . . . The German people is about to build up a new Europe and to start a new world order." Those statements of the editor in the preface to a scientific book may be surprising, all the more as war is the most antieugenic event which can be thought of. The book complies with the scientific standard indicated by the preface. It represents a compilation of arbitrarily selected literature without original ideas or contributions. But worse than that, the compilation particularly of Schwarz contains many mistakes, incorrect quotations and contradictions and suppresses essential publications which are not in accordance with his theory, so that the reading of such a book is misleading rather than enlightening. Ten years ago a publication of such a book would have been severely criticized in Germany; today it seems to represent the highlights of German science. In the first part the normal and comparative anatomy, the embryology of the ear and the functional tests applied to the ear are described on the first forty-five pages. Then the hereditary deafness and deaf-mutism, the hereditary hardness of hearing by impairment of the inner ear, the hereditary atresia of the meatus, otosclerosis, the acquired varieties of deafness and, as a matter of fact, their judicial consideration from the point of view of the German sterilization law is discussed. The second part deals with bodily malformations, their nature and causes, and then the different systemic and localized malformations are discussed. The illustrations are good, as well as the printing and the paper.

Modern Drug Encyclopedia and Therapeutic Guide Presenting Descriptions of 11,114 Modern, Nonpharmacopeal, Ethical Medicinal Preparations in 15,629 Forms, Comprising: 3,421 Drugs and Chemicals, 663 Biologicals, 691 Endocrines, 2,270 Ampoule Medicaments, 3,190 Individual and Group Allergens and 879 Miscellaneous Products. By Jacob Gutman, M.D., Phar.D., F.A.C.P., Director, Brooklyn Diagnostic Institute, Brooklyn. For the Use of Physicians, Dentists, Pharmacists and Medical Students. Second edition. Fabrikold. Price, $7. Pp. 1,644. New York: New Modern Drugs, 1941.

This work represents an attempt to present for the physician, pharmacist or student an index of the nonpharmacopeial medicinal and other preparations which have found more or less favor in the practice of therapeutics. The therapeutic agents described therein are presented with varying details as to their composition, action and uses, how supplied and administration.

The first edition appeared in 1934 and contained descriptions of eight thousand, one hundred and sixty agents. In the foreword appeared the statements "This treatise is designed to meet the demand of the progressive physician for information concerning the most modern therapeutic agencies placed at his command by research laboratories" and "It presents without bias or comment all the popular nonpharmacopeial preparations and other remedies found useful in the treatment of disease." More than one preparation which the book described has been the subject of unfavorable reports by the Council on Pharmacy and Chemistry and the Bureau of Investigation. Some preparations have at one time or another been the subject of governmental action for being misbranded. It is doubted that the truly "progressive physician" might concede that all the described articles were modern or popular.

In 1938 a supplement to the 1934 edition was published. Now there has appeared a second edition, containing descriptions of eleven thousand, one hundred and fourteen nonpharmacopeial preparations with an increase of two hundred and fifty-one pages over the first edition. Like its predecessor, this edition is intended "for the use of physicians, dentists, pharmacists and

medical students," but, like its predecessor, the volume may be of more value as an encyclopedia than as a therapeutic guide. Because of the many proprietary preparations on the market such a book will be of value to the medical librarian, pharmacist, curious student and harassed and busy physician. But its limitations must be kept in mind by those who have occasion to scan its pages. Indications for the use of certain drugs often embrace a wider field than may be found in New and Nonofficial Remedies, Useful Drugs or the like. For example, the use of cinchophen is recognized in New and Nonofficial Remedies for acute gout, occasionally for other joint disorders and sometimes for the relief of pain in sciatica, but in Gutman's volume the indications include "gout, acute and chronic arthritis, rheumatic fever, neuralgia, neuritis, lumbosacral disease, sciatica, in iritis, episcleritis." Again, the dosage is often expressed in an unsatisfactory manner, the terms "tablets" or "teaspoonful" being used instead of grains, grams or units. Nor is the limit of the dose always in accord with the limits expressed in New and Nonofficial Remedies. No doubt part of these discrepancies can be explained by the statement in the foreword, "Descriptions, statements, analysis and all other data are offered without change or comment, but as found available in the numerous standard works and references consulted, or as obtained from the producers and distributors of the respective products." Some discrepancy has been found between the description of a product as presented in advertising of the producer and that contained in this book.

Regardless of its deficiencies, this work may be considered by some to have a place as a source of information on the nonpharmacopeial drugs found on the market. It is divided into parts and chapters which permit easy reference to the drug, the disease or the manufacturer. Some improvements have been made in the second edition, but it still remains more of an "encyclopedia" than a "therapeutic guide."

Bird Malaria. By Redginal Hewitt, Sc.D., Department of Protozoology, School of Hygiene and Public Health, The Johns Hopkins University, Baltimore. The American Journal of Hygiene Monographic Series, No. 15, July 1940. Supported by the De Lamar Fund of The Johns Hopkins University. Cloth. Price, $1.10. Pp. 228, with 46 illustrations. Baltimore: Johns Hopkins Press, 1940.

Malarial parasites were discovered in birds only a few years after the description of malarial parasites in man by Laveran. Not only has work on them been closely related with the work on the parasites of man but they have played an amazing part in the development of knowledge regarding the transmission, pathology, immunology and therapy of the human infections. The present volume should therefore have a wide appeal to students of malaria. It is admirably conceived and excellently outlined. Following an introductory statement there are eleven chapters considering the discovery and early history of bird malaria, geographic distribution and incidence, experimental hosts and methods, species of parasites, characteristics of laboratory infections, symptomatology and pathology, immune reactions, chemotherapy, sexual cycle and mosquito transmission, the exoerythrocytic stages and suggested problems for investigation.

The exact material that should be contained in such a work is a matter of opinion, but it would seem that certain important subjects, such as immunity and exoerythrocytic stages, are superficially treated and that there should be more of a balance between the amount of published work on a given subject and the treatment by the author. Sporadic references are made to investigations on simian and human malaria. It would have been much more helpful if such references had been made more consistently and with a more critical selection of the work to be included. In the present state of confusion over exoerythrocytic schizogony the author can be pardoned for failing to evaluate some of the literature in this field, but it seems unfortunate that the discussion on Toxoplasma and Toxoplasma-like bodies should not have included a clear statement of the differences between these structures and the essentially dissimilar exoerythrocytic stages of malarial parasites. The author adopts certain usages that will probably not be generally accepted. For example, he attempts to follow Wolfson in restricting the term "periodicity" to "the degree of similarity in the length of the different asexual generations." This definition would eliminate the essential synchronism that is implied in general usage and would include a large range of vital phenomena which are not ordinarily considered periodic. The list of eighty-five questions included under chapter 11 as suggestions of problems to be solved exhibit an unusual variation in importance. Although many are thought provoking, it is unfortunate that some emphasize superficial aspects of the subject and others have been essentially answered before.

Besides matters of opinion there are a considerable number of errors. Some of these, such as the statement in table 21 that Reichenow showed that Culex pipiens is susceptible to P. circumflexum, will be misleading to readers using the book for reference. Throughout the discussion of immunity "humoral" is misspelled. A number of the illustrations copied from other authors are inadequately portrayed; as, for example, the halftone reproductions of certain colored plates. In spite of these shortcomings, the volume is thought provoking and will be of great value to beginning students as well as research workers in malaria. The bibliography is unusually complete.

Behandlung innerer Krankheiten: Richtlinien und Ratschläge für Studierende und Ärzte. Von Prof. Dr. Ferdinand Hoff, Vorstand der medizinischen Poliklinik der Universität Würzburg. Paper. Price, 14 marks. Pp. 397, with one illustration. Leipzig: Georg Thieme, 1940.

This book on therapy of internal diseases is a concise discussion of the methods now practiced commonly in Germany. The author was wise to restrict himself to a description of those therapeutic agents with which he himself is familiar. He makes no claim that his survey is all inclusive. The introductory chapter contains a discussion of the general principles involved in treatment. This is followed by a description of the treatment of the more important diseases of the cardiovascular system, lungs, blood, glands of internal secretion, metabolism, digestive organs, genitourinary organs, muscles, nervous system and diseases of an infectious nature. For example, only fourteen of the common diseases of the nervous system are selected for discussion. The clinical remarks on the general characteristics of the diseases are sound and indicate that the author has had wide experience. Although it is true that many useless therapeutic measures are described, on the whole the book is more critical and contains more rational therapeutic information than do most books on treatment published in Germany. The style is clear and the arrangement logical. It can be recommended to physicians who wish to compare modern therapy in America with that in Germany.

Emotional Hygiene: The Art of Understanding. By Camilla M. Anderson, A.B., M.D., Assistant Psychiatrist, Philadelphia General Hospital, Philadelphia. Second edition. Cloth. Price, $2. Pp. 253, with illustrations by Dorothy G. Stevenson. Philadelphia, New York, Chicago, Montreal & London: J. B. Lippincott Company, 1940.

This is a somewhat unusual book on mental hygiene. Intended primarily for nurses, it is simply written and suitable for the general reader. The writer assumes the attitude of a kindly and understanding adviser who attempts to explain the biologic bases of behavior and the nature of emotional disturbances; she offers "a guide for the perplexed." The latter part of the book is addressed specifically to nurses and reveals the author's particularly intimate knowledge of the problems of the student nurse in training. A spiritual quality based on religious feeling, a desire to offer a "philosophy of life" and a woman's outlook determine the peculiar character and atmosphere of the book. It is a good and readable general book on mental hygiene.

I. V. Stalinu: Akademiya Nauk USSR sbornik trudov. [Collected Works of Ukrainian Academy of Science (Dedicated to Stalin on His Sixtieth Birthday)]. Cloth. Pp. 711, with illustrations. Kiev: Izdatelstvo Akademii Nauk USSR, 1940.

This large volume is dedicated by the Ukrainian Academy of Science to Joseph Stalin on the occasion of his sixtieth birthday. About one third of the articles are devoted to extolling the role of Stalin in continuing the work of Lenin and in encouraging the growth of sciences in Russia. The volume contains several articles dealing with the original contributions emanating from the Ukrainian Academy of Science, such as the mechanism of blood transfusion by Bogomolets, corneal transplants of Filatov and the "corticalin" discovered by Nina Medvedeva. The bulk of the articles deal with scientific investigations in fields not related to medicine or biology. The text is in the Ukrainian, the official language of the Ukrainian Socialist Soviet Republic. It would be difficult to appraise the scientific value of contributions on so wide a variety of subjects.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

PREVENTIVE INOCULATIONS FOR TROPICAL RESIDENCE

To the Editor:—A former patient of mine is planning to take up a contract work at the island of Trinidad in connection with the national defense bases at that point. He has asked me to advise him in the matter of the necessary types of vaccinations, inoculations and other preventive measures that might fortify him against certain tropical ailments. Would you please discuss this problem in The Journal?

A. G. Augustine, M.D., Napanoch, N. Y.

ANSWER.—There are no tropical disorders peculiar to Trinidad that are not encountered in other tropical areas, and the specific preventives or vaccines needed for Trinidad are those necessary for any other similar community.

A person going from a temperate climate to Trinidad should be vaccinated against typhoid, paratyphoid, smallpox and diphtheria. There are no other specific measures that have been proved valuable or necessary. Malaria is the chief disease problem of the island, but there is no vaccine for this infection. There are no prophylactic drugs which will prevent an attack of malaria following the bite of an infected mosquito. Quinine and atabrine (chinacrin) will minimize the intensity of an infection or keep it at a subclinical level, but these drugs should be taken only according to the directions of the local physician or health officer. Individuals should be advised to sleep in screened quarters or under bed nets and should avoid unnecessary exposure after dusk. There is no active yellow fever in Trinidad.

Other general measures such as the use of light clothing, boiling of water, avoiding fresh fruits and vegetables are necessary as in any tropical area and are covered completely in the chapter on tropical hygiene in the sixth edition of E. R. Stitt's Diagnosis and Treatment of Tropical Diseases (Philadelphia, Blakiston Company).

PROGNOSIS AFTER REMOVAL OF HYPERNEPHROID CARCINOMA

To the Editor:—A woman aged 38 had a nephrectomy about ten months ago for a hypernephroma involving the lower pole of the left kidney. At that time there was a mass about the size of an orange in the left lumbar region and there were stringy blood clots in her urine. Intravenous pyelography showed a deformed kidney pelvis and a mass attached to the lower pole of the left kidney while the right kidney was normal in all respects. At operation, under spinal anesthesia, a well encapsulated tumor was found growing from the lower pole of the left kidney. It was noted at the time that there were no evidences of metastasis in the abdomen. The pathologic diagnosis of hypernephroma was made, of the clear celled type. Since operation she has had occasional pain at the incision site but no apparent abnormality. Since operation she has been having a twice monthly urinalysis which has been persistently normal, with specific gravities ranging from 1.016 to as high as 1.028 but usually about 1.022. She has no nocturia and has never bled again since. The blood pressure has been consistently about 120 systolic and 82 diastolic, as it was before her operation. Chest roentgenograms have been repeatedly negative for any form of disease. The problems which now enter are the following: Should the patient be placed on any special diet, considering the fact that she has such good concentrating power in her residual kidney? Her ideal weight is about 135 pounds (61 Kg.). About how much should she be allowed to deviate from this? In view of the age and history of the patient would there be any great danger in her carrying a pregnancy through to term? What precautions would be necessary to make sure that she would have the best possible chance with the fewest complications? How often should there be a complete checkup, and what tests would be adequate to detect possible spread of the tumor as well as existing kidney function? Should her activities be curtailed in any way? Are there any special drugs that should be avoided in treatment?

M.D., Pennsylvania.

ANSWER.—The clinical observations as given indicate a normal remaining kidney. Such a solitary kidney carries with it an adequate reserve and is capable of carrying out all the renal excretory needs of the body. Dietary or medicinal restrictions are therefore not necessary. Likewise the body weight need not necessarily be kept within any special limits. The patient should be encouraged to lead a normal life.

Special functional tests of the remaining kidney are not urgently indicated, because the potential danger in a case like this lies not so much in a failure of the renal function as in the consequences of the malignant condition.

Following a nephrectomy for hypernephroid carcinoma, the chances for a five year cure are between 25 and 30 per cent. The fatal outcome in the remaining cases is due to metastases in the long bones, in the skull and in the lungs and occasionally to a recurrence at the original site of the neoplasm. The local recurrences are best demonstrated by palpation, and the metastases by roentgen examination. Since these tumors are notably radioresistant, the surgeon has accomplished all that is within his power when he has performed the nephrectomy.

If the patient is already pregnant there is no reason why she could not carry her pregnancy through to term. Special diet or medication is not necessary during such a pregnancy. The complication which is most to be feared in the presence of a previously healthy solitary kidney is pyelitis. The urine should therefore be examined at frequent intervals for the presence of pus cells (every two weeks at first and every week in the latter half of the pregnancy).

But further pregnancies should be discouraged because of the high ultimate mortality of patients who have been operated on for hypernephroid carcinoma.

POSITIVE SEROLOGIC TEST IN GIRL WITHOUT SYMPTOMS

To the Editor:—Two years ago a girl then 12 years old, in the course of a general physical examination, was found to have a 4 plus Wassermann reaction. In another laboratory the Meinicke, Kahn and Jacobsthal reactions were also found positive. The bloods of her twin sister, her mother, her father and four brothers were repeatedly found negative. She was nursed, the same as her twin sister, by her mother and five different wet nurses whose bloods were not tested. Therefore the possibility of contagion exists, but on the other hand both the mother and the family physician are positive that this girl at no time had any sore in the mouth, sore throat, cutaneous eruption or moist patches near the anus or genitalia that might be taken for manifestations of early syphilis. The only cutaneous diseases that she ever had, according to the mother's statement, was a mild case of measles in infancy, two or three outbreaks of urticaria of short duration and an attack of furunculosis two years ago with typical boils that have left white scars. A physical examination made today shows a girl of 14, well developed, 63 inches (160 cm.) tall, weight 110 pounds (50 Kg.), with nearly perfect teeth, not a single cavity or filling, normal shape and fairly good alinement, tonsils present but small and healthy, no adenoids, tongue, gums and mucous membranes normal, eyes, eyelids, corners of the mouth, ears, scalp and hair normal. The lymph nodes and spleen are not palpable. The tendon reflexes are normal. The skin shows only scars of boils on the neck, forearms and back, no acne nor any other abnormality present. The urine is normal. The blood is normal, except for a positive Meinicke reaction. The menstruation has been normal since the age of 12. No Wassermann test has ever been made on the spinal fluid. For the last two years she has been submitted by other physicians to intermittent treatment with arsenicals and bismuth preparations in series of about ten doses of an arsenic compound followed by ten doses of a bismuth compound and a period of rest, having had five treatments in all. On the first examination I could not ascertain the size of the doses administered. Now the question arises whether this girl should be submitted to intensive antisyphilitic treatment until the serologic reaction is reversed or not treated at all. I have been consulted by the attending physician to advise him on this point, but I am at a loss to decide. Of course my first impulse is to advise intensive treatment, but in view of the facts aforementioned are we justified in submitting a young girl to the inconvenience, dangers and expense involved by this course on the rather scanty foundation of an isolated serologic abnormality? Julio Bianchi, M.D., Guatemala.

ANSWER.—For a patient living in the tropics, of course there is the possibility of her having had yaws, malaria, pinta or leprosy. Certainly with the first disease there would have been plenty of cutaneous evidence of it in the past. It is stated that the spleen is not palpable and that the blood is normal except for the serologic reaction. Nevertheless, it might be well to conduct a careful investigation to rule out malaria, since it is well known that there is a positive serologic reaction in a large proportion of such patients. The fact that she has had no cutaneous disease would rule out pinta. It appears that there is no evidence of leprosy.

Occasionally "false positive" serologic reactions are seen in infectious mononucleosis, in malaria and rarely in cancer and tuberculosis. In leprosy and pinta the percentage of positive reactions is high—around 80. Even with these diseases ruled out there is an occasional false positive reaction. Kahn would call them biologic reactions.

Since this young girl's physical examination is entirely negative, she should have a lumbar puncture. If it is found to be negative, one would not be greatly concerned over the situation, particularly in view of plenty of treatment in the past. The girl should be regularly checked and carefully examined every six months to one year. A conservative attitude is indicated.

A recent report by J. E. and C. F. Moore, and Harry Eagle (Biologic False Positive Serologic Tests for Syphilis, THE JOURNAL, Nov. 9, 1940, p. 1602) may be consulted.

"MINERAL SPIRIT" AND JAUNDICE

To the Editor:—Recently a white man aged 30, in previous excellent health all his life, suffered from malaise for a period of four months. No other symptom was present. Examination throughout was negative. The patient stated that he just did not feel well. A short time after his physical examination he developed a sudden acute generalized jaundice with no other symptoms. In fact he began to feel better. The patient is a cleaner, using a commercial preparation known as Kyso Mineral Spirits, manufactured by the Standard Oil Company of Kentucky. Will you inform me as to the ingredients of this preparation, especially as to liver toxicity that might occur from contact, and whether there is any record of such toxicity in others who are in contact with this material.

Benjamin L. Camp, M.D., Ellijay, Ga.

ANSWER.—Mineral spirit or white spirit is a petroleum distillate chiefly used as a turpentine substitute. It is not a precise chemical entity, and the manufacturing specifications for various companies may vary slightly as to boiling point range, flash point, color, specific gravity and the like. It is used principally as a solvent for paint and as a dry cleaning agent. Thousands of workers in this country daily are exposed to mineral spirit in scores of industries and industrial operations. From its use, industrial dermatitis is comparatively common. Acute mental states resembling alcoholic intoxication, called by workmen "naphtha jags," sometimes arise. Long continued exposure to petroleum distillates akin to mineral spirit has led to an occasional severe and intractable injury chiefly centering about damage to the central nervous system, the medullary sheaths of peripheral nerves, the heart muscles and the liver. In the chronic form of the disease, as described by Hayhurst, the principal manifestations are loss of weight, anxiety, mental depression, a tendency to stupor and disorientation, tremors, ataxia, moderately severe anemia, increased pulse rate, and diarrhea with alternate constipation. Here and there, in publications dealing with this form of intoxication, mention is made of jaundice, hepatitis and tenderness over the liver. However, jaundice as an extensive manifestation of injury has not been encountered. Extended discussions of poisoning by petroleum distillates may be found in *Industrial Medicine* **5**:53 (Feb.) 1936 and in the book Toxicity of Industrial Organic Solvents, published by the Chemical Publishing Company of New York, page 109. According to this book two cases of intoxication, one accompanied by unconsciousness, have been attributed by the British Home Office to the use of white spirit since 1929. First was a workman painting in a confined space and the second in a dry cleaning works. The probabilities of mineral spirit causing the type of jaundice described in the query is, therefore, slight. Since this workman is a cleaner (presumably a dry cleaner), inquiry should be made as to exposure to carbon tetrachloride. Finally, consideration should be given also to the possible toxic effects of impurities, such as thioalcohol and thioether.

TRAUMA TO BACK AND POLIOMYELITIS

To the Editor:—I am interested in a case in which a laborer jumped off a wagon and claimed to have hurt his back. Two days later his attending physician noted paralysis of the left leg and urinary retention. Two days after that the patient was dead. Autopsy by competent pathologists revealed (1) that the cause of death was acute anterior poliomyelitis and (2) that there was no evidence of injury from the fall to the spinal column or the spinal cord. Can you give me any references in regard to the possible contributory factor of the trauma to the man's death?

Solomon S. Kauvar, M.D., Denver.

ANSWER.—Stern cited 3 cases from the literature prior to 1913 in which physicians have considered trauma a possible factor in a case such as this on the theory that the injury produced a "locus minoris resistentiae" in the spinal cord.

Parker reported several cases in which he considered the possibility of trauma localizing the lesion in the particular part affected.

In this case the data are not complete. As they are given, the probability is that the pain in the back was a manifestation of the invasive stage of poliomyelitis. In this premonitory stage the muscles of the back may be spastic and motion painful. The course was no different from that in other cases of fulminating poliomyelitis. Even if one accepts the pain in the back as a symptom of injury there is no basis from the data given for assuming that the injury had any effect.

References:

Stern, R.: Traumatische Enstehung innerer Krankheiten ed. 3, Jena, Gustav Fischer, 1930, p. 16.

Parker, H. L.: Acute Anterior Poliomyelitis: The Relationship of Injury to the Localization of Paralysis, *Irish. J. M. Sc.*, July 1937, p. 303.

INJURIES TO FEMALE GENITALIA FROM INTERCOURSE

To the Editor:—Is it possible for abrasions of the vagina and introitus to result from a vigorous, voluntary sexual intercourse with a woman who has been married over five years and who is normally built? Under what circumstances? Kindly list the injuries that may result from forced intercourse with married women.

M.D., Fairfield, Conn.

ANSWER.—Yes. Abrasions may result from hasty and traumatic entrance, from disproportion in the size of the genitalia, from violence of relationship even though not objectionable at the time of contact, or from an unusually prolonged (or repeated) sexual act. Unusually deep insertion may reactivate pelvic cellulitis as the result of cervical traumatism. Other causes to be considered are the employment of a concentrated postcoital vaginal douche as prophylaxis against conception or infection, and the introduction or activation of trichomonads or monilia.

A listing of all injuries which may result from forced intercourse is scarcely possible. Most important are (1) bruising and tearing of the external genitalia, also cutting from entrapped hairs, and (2) injury of the urethra, producing a "urethral hang" (the urethra is subject to distressing honeymoon trauma perhaps more than any other genital tissue). Serious injuries to the bladder, rectum and upper part of the genital tract are possible but unlikely.

SODIUM CITRATE AND BLOOD COAGULATION

To the Editor:—Sodium citrate solution is mixed with blood in the indirect method of blood transfusion to prevent the coagulation of blood. The statement is made on page 942 of the third edition of Sollmann's Manual of Pharmacology that when sodium citrate solution is injected intravenously "the coagulation time of the circulating blood is definitely shortened." I have seen similar discrepant statements in a textbook on pharmacology for nurses. If these statements are true, what is the explanation?

L. A. Crowell Jr., M.D., Lincolnton, N. C.

ANSWER.—In order to prevent coagulation of blood, about 0.25 per cent of sodium citrate must be added so as to bind the calcium; 0.1 per cent and less do not hinder coagulation. Intravenous injection of 10 to 50 cc. of 10 per cent sodium citrate, which would bring the blood concentration of patients to less than 0.01 per cent, shortens the coagulation time for several hours, probably by liberating thromboplastin from the platelets. The pertinent literature is cited in Sollmann's Manual of Pharmacology, fifth edition, page 919.

POLARIZED AND FLUORESCENT LIGHTING FOR LIBRARY

To the Editor:—I have been asked regarding the value of polarized light as compared to fluorescent light for reading in public libraries. Will you kindly advise regarding the availability, practicability and utility as far as the effect on the vision is concerned?

Edwin C. Braynard, M.D., Glen Cove, N. Y.

ANSWER.—Polarized light is not to be recommended for public libraries. There are better ways of avoiding poor lighting, and it is not an economical method. Fluorescent light is economical and if skilfully arranged is highly satisfactory. I suspect that the idea is to have lamps on a table or desk, with the reader facing the lamp. This is a poor arrangement. If one must have this arrangement, polarized light is probably the best for reducing specular glare. Abundant diffuse general illumination is the best.

INSULIN ADMINISTRATION AND HEPATOMEGALY

To the Editor:—In a discussion of the causes for abdominal distention in a girl with diabetes the statement appears in The Journal (Feb. 8, 1941, p. 550) that "in juvenile patients with severe diabetes who are maintained entirely on regular insulin (without protamine zinc insulin) it is not uncommon to have marked enlargement of the liver with abdominal distention." It seems unfortunate that the implication is made that hepatomegaly can be properly attributed to the use of unmodified insulin or that the condition may be avoided through the use of the protamine product. It would be correct to state that, in the child in whom diabetes mellitus is inadequately controlled for a long period, hepatomegaly may result. Many children with severe diabetes have been under close observation here with the use of weighed diets and unmodified insulin for many years, and in those remaining free from significant glycosuria hepatomegaly has not been encountered. Such excellence of control can be maintained through the use of unmodified insulin, if the dose and the frequency of administration are sufficient and other factors in control are observed. We have not been able to accomplish this through the use of protamine zinc insulin and feel that poor control is favored through its use. The substitution of protamine zinc insulin for the unmodified product may make the regimen simpler for the patient and for the physician, but when the resultant level of control of diabetes is lowered the substitution seems unwarranted.

J. D. Boyd, M.D.,
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